

Contraceptive Safety

RUMORS
AND
REALITIES



Eric R. Miller, Barbara Shane, and Elaine Murphy

Community Health Cell

Library and Documentation Unit

367, "Srinivasa Nilaya"

Jakkasandra 1st Main,

1st Block, Koramangala,

BANGALORE-560 034.

Phone : 5531518

Contraceptive Safety

**RUMORS
AND
REALITIES**

Second Edition

Eric R. Miller, Barbara Shane, and Elaine Murphy

Table of Contents

<i>Introduction</i>	3
<i>Family Planning Saves Lives and Promotes Health</i>	5
<i>Contraceptive Safety</i>	7
<i>Oral Contraceptives</i>	9
<i>Emergency Contraceptive Pills (ECPs)</i>	13
<i>Injectable Contraceptives</i>	15
<i>Contraceptive Implants</i>	19
<i>Intrauterine Devices (IUDs)</i>	21
<i>Condoms</i>	23
<i>Spermicides</i>	24
<i>Female Barrier Methods</i>	25
<i>Sterilization</i>	26
<i>Fertility Awareness-Based Methods</i>	31
<i>Lactational Amenorrhea Method (LAM)</i>	33
<i>Maximizing Contraceptive Safety</i>	34
<i>Technical Review Panel</i>	35
<i>Key Technical Sources</i>	36
<i>References</i>	37



To receive additional copies of *Contraceptive Safety: Rumors and Realities*, please write the number you need in the space provided. If you require more than 5 copies, please state reason.

..... Contraceptive Safety: Rumors and Realities

Stamp

**International Programs
Population Reference Bureau
1875 Connecticut Avenue, NW
Suite 520
Washington, DC 20009 USA**

Thank you for your cooperation. Please provide us with some information about yourself (either type the information or print very clearly):

Name: _____

Title: _____

Organization: _____

Address: _____

City/Country: _____

Telephone: _____ **Fax:** _____

E-mail: _____

Please add postage, fold, and mail the folded form or place the form in an envelope and mail to the address provided. You can also fax it to 202-328-3937, or e-mail it to prborders@prb.org.

Contraceptive Safety: Rumors and Realities

2nd edition

Questionnaire

Would you please take a moment to help us evaluate our work by answering a few questions?

1. Please check the category that best describes the primary focus of your organization.

- | | | |
|---|---|---------------------------------------|
| <input type="checkbox"/> Women's issues | <input type="checkbox"/> Health | <input type="checkbox"/> Other: |
| <input type="checkbox"/> Education | <input type="checkbox"/> Religion | |
| <input type="checkbox"/> Media | <input type="checkbox"/> Business | |
| <input type="checkbox"/> Youth | <input type="checkbox"/> Population/family planning | |
| <input type="checkbox"/> Development | <input type="checkbox"/> Environment | |

2. How do you rate the content and presentation (layout and graphics) of the report?

- | | | | | |
|---------------|------------------------------------|-------------------------------|-------------------------------|-------------------------------|
| Content: | <input type="checkbox"/> Excellent | <input type="checkbox"/> Good | <input type="checkbox"/> Fair | <input type="checkbox"/> Poor |
| Presentation: | <input type="checkbox"/> Excellent | <input type="checkbox"/> Good | <input type="checkbox"/> Fair | <input type="checkbox"/> Poor |

Comments:

.....
.....

3. How do you plan to use the information contained in this report? You may check more than one.

- | | |
|---|---|
| <input type="checkbox"/> Reference in daily work | <input type="checkbox"/> Project/program design |
| <input type="checkbox"/> Writing reports/speeches | <input type="checkbox"/> Training/workshops |
| <input type="checkbox"/> Pass it to library | <input type="checkbox"/> Conferences |
| <input type="checkbox"/> Policy development | <input type="checkbox"/> Other: |

4. How well has this booklet explained the advantages and disadvantages of various contraceptive methods?

- | | | |
|------------------------------------|---|-------------------------------------|
| <input type="checkbox"/> Very well | <input type="checkbox"/> To some extent | <input type="checkbox"/> Not at all |
|------------------------------------|---|-------------------------------------|

Comments:

.....
.....

5. Are the "Rumors" and "Realities" about contraceptives appropriate and informative?

- | | | |
|--|--|-------------------------------------|
| <input type="checkbox"/> Very approp./infor. | <input type="checkbox"/> Somewhat approp./infor. | <input type="checkbox"/> Not at all |
|--|--|-------------------------------------|

Comments:

.....
.....

6. Although this booklet contains medical and scientific information, it has been written for a nontechnical audience. How understandable is the booklet?

- | | | |
|--|--|-------------------------------------|
| <input type="checkbox"/> Very understandable | <input type="checkbox"/> Somewhat understandable | <input type="checkbox"/> Not at all |
|--|--|-------------------------------------|

Comments:

.....
.....



Population Reference Bureau
Division 10

1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020

2

January 20, 1990

Dear Colleagues:

The Population Reference Bureau (PRB) has just published a new report, "The World's Population: Trends and Prospects." This report is a comprehensive overview of the world's population, covering the past, present, and future. It includes data on population growth, distribution, and composition, as well as projections for the future. The report is available in both print and electronic formats. We are pleased to share this information with you and hope it will be helpful in your work.

The report is organized into several sections, including:

- World Population Trends
- Regional Population Trends
- Population Composition
- Population Projections

We are also pleased to announce that the report is available in a new format, as a CD-ROM. This format allows you to search the data and projections in a more efficient manner. We hope you will find this format useful.

If you have any questions or need more information, please contact us at (202) 293-9100. We are happy to assist you.

Sincerely,
John R. Wilentz
Director



*Population Reference
Bureau, Inc.*

*1875 Connecticut Ave., N.W.
Suite 520
Washington, D.C. 20009-5728
Telephone: (202) 483-1100
Fax: (202) 328-3937
E-mail: popref@prb.org*

January 29, 1999

Dear Colleague,

The Population Reference Bureau (PRB) has just produced *Contraceptive Safety: Rumors and Realities*, second edition. This booklet is a resource guide on contraception for policymakers, program managers, service providers, and others needing accurate information on contraceptive methods.

It answers questions about contraception, such as: What are the advantages, disadvantages, risks, and benefits of each method? How do the potential risks compare with those associated with pregnancy and childbirth? Given each individual's unique medical profile, preferences, and personal situation, which methods are the most appropriate for her or him?

The new edition is based on the latest scientific research and provides up-to-date information on the safety of contraceptive methods. Each contraceptive method is described, along with its advantages and disadvantages. Common rumors about methods are given, along with the scientific "reality." The booklet includes new information about contraceptive implants, emergency contraceptive pills, female condoms, and the lactational amenorrhea method. It also discusses postpartum contraception, and whether methods protect against sexually transmitted infections, including HIV/AIDS.

We hope that you will find *Contraceptive Safety: Rumors and Realities* informative and useful. We would appreciate your completing the enclosed questionnaire, which provides important feedback for our programs. If you would like additional copies of *Contraceptive Safety: Rumors and Realities*, please use the order form on the back of the questionnaire and return it to PRB or send an e-mail to prborders@prb.org specifying the language, number of copies, and where the order should be sent.

Sincerely,

A handwritten signature in dark ink, reading "Alene H. Gelbard". The signature is fluid and cursive, with the first name "Alene" being more prominent.

Alene H. Gelbard, Ph.D.
Director
International Programs

Introduction

When modern contraceptives, such as the oral contraceptive and the intrauterine device (IUD), became available more than 35 years ago, excitement prevailed about their potential to prevent unintended pregnancies, while concerns were also raised about their long-term safety. Not surprisingly, the first generation of contraceptive technologies brought unanticipated risks and benefits. Since that time, these methods have been reformulated and redesigned to increase their safety and effectiveness. Indeed, contraceptive drugs and devices have been, and continue to be, subjected to extensive worldwide research to expand our knowledge of their safety. This research has documented many of the unanticipated benefits of methods, such as protection against certain cancers.

Yet, memories of problems with earlier methods—which received worldwide publicity—remain long after those methods have been discontinued or improved. Some people—health providers as well as clients and nonusers—understandably confuse today’s methods with the earlier methods of the same category (for example, oral contraceptives). In addition, misperceptions, false rumors, and even inaccurate media reports about currently available technology, have contributed to confusion about the safety of current methods.

Although modern methods of contraception are safe and effective for most people, legitimate questions continue to be raised. What are the advantages, disadvantages, risks, and benefits of each method? How do the potential risks compare with those associated with pregnancy and childbirth? And, given each individual’s unique medical profile, preferences, and personal situation, which methods are the most appropriate?

The information in this booklet helps answer these questions and is intended as a resource guide on contraception for policymakers, program managers, service providers, and others needing accurate information on the risks and benefits of contraceptive methods. It is based on the latest scientific research and has been reviewed by family planning providers, experts in contraceptive technology, and women’s health advocates. Each method is described along with its advantages and disadvantages. In addition to the method’s contraceptive effectiveness, other health benefits of methods are explained under “Advantages.” Conditions that would generally prohibit use of a method are explained under “Medical Risks,” along with possible complications related to its use. Other potential problems that may affect users, but which are not medical contraindications, are explained under “Side Effects” and “Other Drawbacks.” Common rumors about methods are given, along with the scientific “reality.”

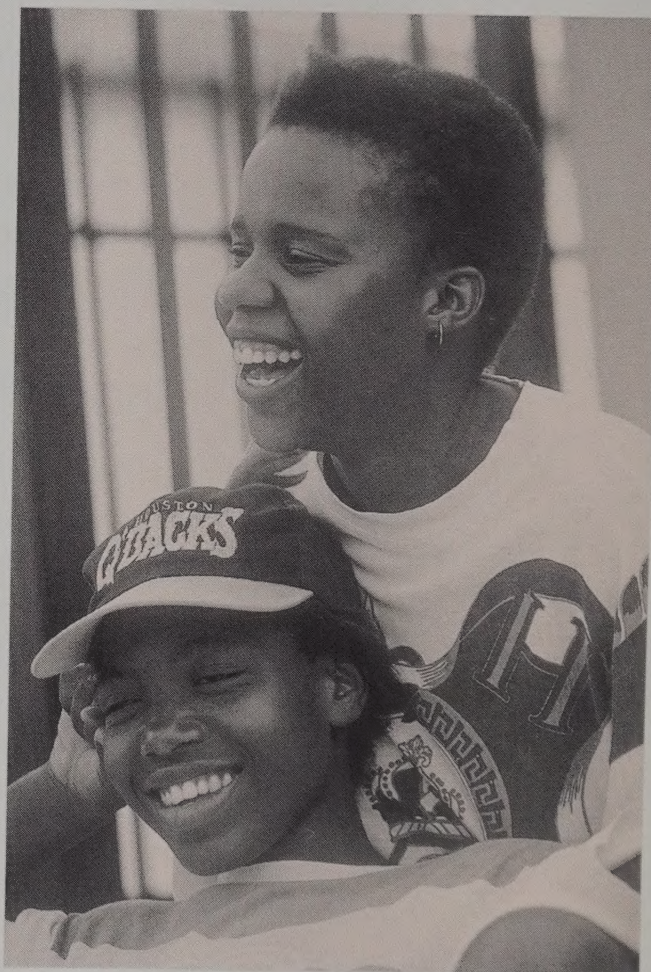
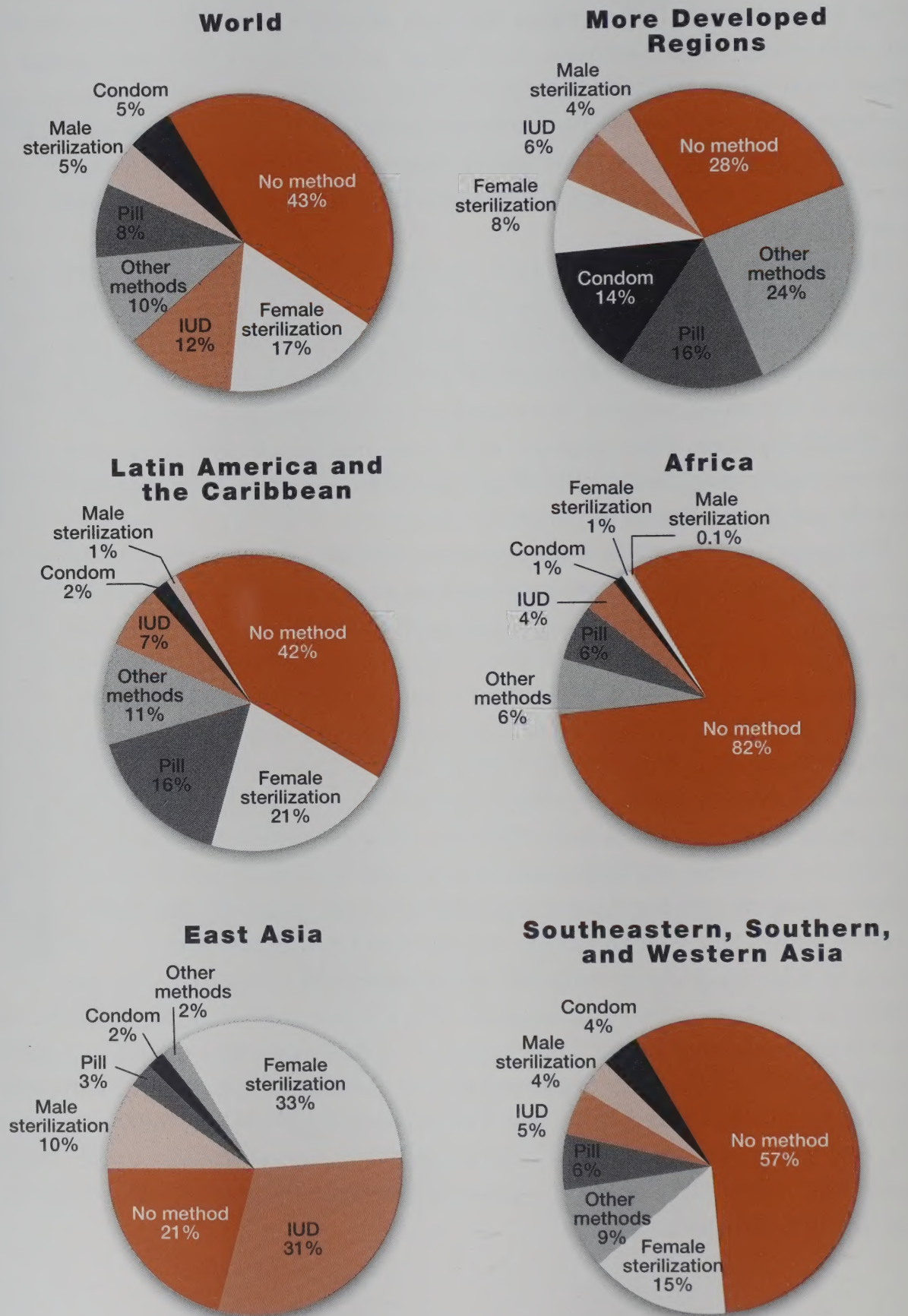


Photo: Richard Lord (South Africa)

Figure 1
Contraceptive Use by Region and Method Among Currently Married Women, Ages 15-49



Note: Due to rounding, totals may not equal 100%.

Source: United Nations Department for Economic and Social Information and Policy Analysis, Population Division, *Levels and Trends of Contraceptive Use as Assessed in 1994* (New York: UN, 1996).

Family Planning Saves Lives and Promotes Health

Each year more than 585,000 women die from complications of pregnancy, childbirth, and unsafe abortions. Ninety-nine percent of these deaths occur in developing countries.¹ While not all maternal deaths are predictable, women whose health is already compromised and those who are at the beginning or end of their reproductive lives are at higher risk. Unintended and unwanted pregnancies may also increase a woman's health risk. About 50 million abortions take place each year. Almost half of these abortions take place in unsafe conditions, resulting in at least 75,000 maternal deaths. One in eight maternal deaths is due to abortion-related complications, and 90 percent of these deaths occur in developing countries.² Helping women and their partners use family planning to avoid risky, as well as unintended and unwanted pregnancies, would save many of their lives; at least 25 percent of all maternal deaths could be prevented in this way.³

Children's lives can also be protected through family planning. Children in poor countries whose mothers have died are themselves more likely to die. In addition, on average, a child born less than two years after the last birth is twice as likely to die as a child born after an interval of at least two years. If all births were spaced two or more years apart, an average of 25 percent of infant deaths could be avoided in the developing world.⁴

Finally, in the face of the pandemic of sexually transmitted infections (STIs), including the human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDS), condoms provide effective protection when used correctly and consistently. Today, family planning counselors should inform clients if the method they select protects against STIs, and advise clients at risk of the benefits of using condoms alone or with another method to protect against STIs.

Worldwide, there is a large unmet need for family planning. Experts estimate that more than 120 million married women in developing countries want to limit or space future pregnancies but are not using contraception. Millions more couples need more effective or appropriate methods. Adolescents, both married and unmarried, often have difficulty obtaining access to family planning services and are less likely than older women to use contraception. In international surveys, women say they do not use family planning because they fear health and side effects, lack sufficient knowledge about methods, and do not have access to the methods they want. Some women do not come to clinics or do not return if they are treated rudely or have to wait too long. Sociocultural barriers, such as husbands' disapproval, limited decisionmaking powers for women, and family pressure to have more children also inhibit women from practicing family planning.⁵

Improving interactions between clients and providers, reducing waiting time for services, and offering clear explanations of the use, side effects, safety, and effectiveness of contraceptive methods will reduce some of these barriers to use and help individuals make informed choices about family planning.

Table 1

Comparison of Death Risks from Pregnancy and Childbirth and from Use of Family Planning Methods

Women's Risk of Death from Pregnancy and Childbirth¹

Region	Maternal deaths per 1000,000 live births	Lifetime risk of maternal death
World	430	1 in 60
More Developed	27	1 in 1,800
Developing	480	1 in 48
Africa	870	1 in 16
Asia	390	1 in 65
Eastern Europe	62	1 in 730
Western Europe	17	1 in 3,200
Latin America/Caribbean	190	1 in 130
North America	11	1 in 3,700
Oceania	680	1 in 26

Risk of Death From Use of Modern Contraceptive Methods in the United States² Among Users of the Method, Ages 15-44

Method	Deaths per 100,000 users	Risk of death in one year
Oral Contraceptives –		
Nonsmoker	1.5	1 in 66,700
Age <35	0.5	1 in 200,000
Ages 35-44	3.5	1 in 28,600
Oral Contraceptives –		
Heavy Smoker		
(25+ cigarettes/day)	58.8	1 in 1,700
Age <35	18.9	1 in 5,300
Ages 35-44	142.9	1 in 700
IUD (per year)	0.01	1 in 10,000,000
Diaphragm, condom, spermicide	0.0	0
Fertility awareness-based methods	0.0	0
Female sterilization –		
laparoscopic tubal ligation	2.6	1 in 38,500
Male sterilization – vasectomy	0.1	1 in 1,000,000

Other Risks of Death in the United States

(Men and women of all ages per year)

Motorcycling	100.0	1 in 1,000
Automobile driving	16.9	1 in 5,900
Continuing the pregnancy (risk per pregnancy)	10.0	1 in 10,000

The deaths indicated from use of contraceptive methods are due to the method only; there are additional risks of death from pregnancy and childbirth or AIDS resulting from method failure.

Sources:

1. World Health Organization and UNICEF, *Revised 1990 Estimates of Maternal Mortality, A New Approach by WHO and UNICEF* (Geneva: World Health Organization, April 1996): 6.
2. R. A. Hatcher, et al., *Contraceptive Technology*, 17th ed. (New York: Ardent Media, Inc., 1998): 230.

Contraceptive Safety

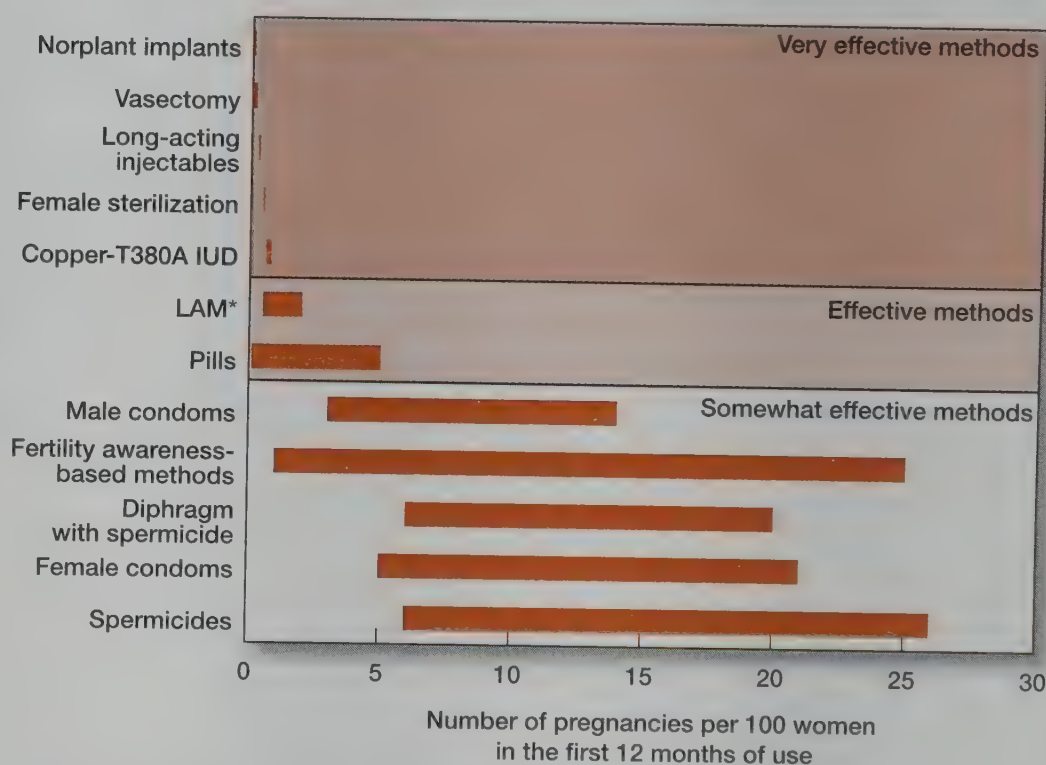
Research indicates that the relative risk of dying from use of modern methods of contraception is far less than the risk of death associated with pregnancy and childbirth. Table 1 shows that while some contraceptive methods increase a user's risk of death, these risks are very small compared to the risks of dying from pregnancy-related causes. The table also shows that the risks associated with preventing pregnancy are small compared with common activities such as driving a car or motorcycle in the United States. The data in Table 1 are based on family planning use in the United States only as there are no reliable sources of data on method risks for developing countries. Yet results from a limited study in Indonesia and Egypt are consistent with the table.⁶

The ideal family planning method—one that is absolutely safe for all users, 100 percent effective, convenient, inexpensive, reversible, and does not interfere with sexual intercourse—has not yet been developed and may never be. However, there is now a wide range of contraceptive methods available that are safe and effective for most women and men. Major improvements, including increased safety, effectiveness, ease of provision, and decreased side effects and costs have reduced problems (see Table 2, p. 8). The variety of contraceptive choices that exist today can meet most women's and men's reproductive needs. Further, some of the methods carry additional health benefits, such as reductions in the risks of certain cancers, anemia, and STIs, including HIV/AIDS.

While scientific research has helped improve the quality of contraceptives, family planning programs can influence method use by improving service quality and accessibility. Services can be improved by ensuring that clients have sufficient information to make an informed, voluntary choice of method. This includes: an understanding of the effectiveness and correct use of the method, possible side effects, health risks and benefits, signs and symptoms indicating the need to return to the clinic, information about the return to fertility after discontinuation of the method, and information about protection against STIs.

Figure 2

Effectiveness of Contraceptive Methods (Range of Failure Rates)



*Within first six months after childbirth

Figure 2 shows rates of effectiveness of contraceptive methods for users of that method during the first 12 months of use. The bars show the range of effectiveness for each method. The highest levels of effectiveness are for the method as used correctly and consistently. The lowest levels of effectiveness shown are for methods as they are commonly used (average use).

Sources: R.A. Hatcher, et al., *Contraceptive Technology*, 17th ed. (New York: Ardent Media, Inc.: 1998); R.A. Hatcher, et al., *Essentials of Contraceptive Technology* (Baltimore: The Johns Hopkins School of Public Health, Population Information Program, 1997).

Table 2

Improvements in Modern Contraceptive Methods

1960	1998
Hormonal Methods	
High-dose pills	Low-dose pills Progestin-only pills Emergency contraceptive pills 90-day injectable (DMPA) 60-day injectable (NET EN) 30-day injectables (Cyclofem, Mesigyna) Implants (Norplant®)
Intrauterine Devices	
IUDs	New Generation IUDs (Copper, hormone releasing)
Barrier Methods	
Condoms (male) Diaphragms, foams & jellies	Male latex and plastic condoms Female synthetic condoms Diaphragms (new silicone variety) New cervical cap New vaginal sponges Spermicides (tablets, film, gels, foam)
Sterilization	
Female sterilization (major surgery) Male sterilization (vasectomy)	Female sterilization (laparoscopy, minilaparotomy) Male sterilization (no-scalpel and regular vasectomy)
Fertility Awareness-Based Methods	
Two methods (rhythm and temperature)	Several methods (Cervical mucus, temperature, symptothermal, lactational amenorrhea)

Oral Contraceptives

About 93 million women worldwide use combined oral contraceptives (COCs), often known as “the pill.”⁷ These contraceptives are composed of synthetic female hormones similar to natural estrogen and progesterone. These hormones act together to prevent ovulation—the release of an egg once a cycle. If taken according to directions, oral contraceptives are highly effective—99.9 percent of couples using the method correctly and consistently during one year will avoid pregnancies.⁸ As commonly used, COCs are about 95 percent effective.⁹

Advantages

Main Benefits—Pills are highly effective, safe, and reversible. The most recently developed oral contraceptives contain low doses of hormones. The use of pills does not interfere with a couple’s intimacy. When a woman wants to have a child, she simply has to stop taking pills to regain her fertility.

Protection Against Major Medical Problems—Pills have important health benefits in addition to their contraceptive effect. First, long-term use of pills can reduce a woman’s risk of developing endometrial cancer by 80 percent.¹⁰ Second, women who use pills for at least two years have a 40 percent lower risk of developing ovarian cancer than women who do not use them.¹¹ Third, pills offer protection against other diseases including symptomatic pelvic inflammatory disease (PID), and some benign breast disease.¹² Pills have also been used in the prevention and treatment of endometriosis.¹³ The reduced menstrual flow most women experience while using pills protects against anemia, a common problem in developing countries. Because of their efficacy in preventing pregnancies when used correctly, pill users also benefit from protection against ectopic pregnancy—the life-threatening development of a pregnancy outside the womb.

Other Positive Effects—Many women find that pill use regularizes their menstrual periods and reduces menstrual cramps. Some pills have been shown to have a positive effect in treating acne.¹⁵

Disadvantages

Medical Risks—The estrogen-type hormones in COCs can cause subtle—and usually insignificant—increases in blood pressure in women, but such increases are not considered significant risks. Nonsmoking women of any age who use modern, low-dose pills are generally not at risk of cardiovascular problems.¹⁶

Women using pills do have slightly increased risks of blood clots and certain types of stroke compared with nonusers, although the overall risk is low and disappears when pills are discontinued.¹⁷ Women over age 35 who smoke or who currently have high blood pressure, or who previously had a stroke, heart attack, or blood clots would be at increased risk for these cardiovascular problems if they use pills and are therefore advised to use another method of contraception.¹⁸

Rumor — “The pill is a strong, dangerous drug and using it can permanently harm a woman.”

Reality — The earliest pill, developed in the late 1950s, contained much higher doses of synthetic estrogen and progesterone than are now commonly used. The hormone dosage in many of today’s COCs is close to the lowest level necessary to achieve protection against pregnancy. Oral contraceptives have now been extensively tested and evaluated and have been found to be safe and effective for most women.

Rumor — “Use of the pill will cause infertility.”

Reality — There is no evidence that oral contraceptive use decreases future fertility. After stopping use of pills, there may be a short delay of one to three months in the return of ovulation and menstruation.¹⁴

Rumor — “The pill causes cancer.”

Reality — This issue is complicated and under constant study because there are many kinds of cancers. There is no conclusive evidence showing that pills cause cervical or breast cancers. Research has, in fact, shown that oral contraceptives offer protection against ovarian and endometrial cancers (see Box 2, p. 12).

Rumor – “A woman should stop using the pill after a year or two to give her body a ‘rest’ from the hormones.”

Reality – There is no evidence that women taking pills should stop taking them periodically to ‘rest’ their bodies. In fact, the increased risk of pregnancy that occurs when a woman stops taking pills is much more of a health risk than continuing to take them.

Women who have breast cancer or active liver disease, such as hepatitis, may make their problems worse if they begin taking oral contraceptives, so they should use another method of contraception.¹⁹

Extensive reviews of the medical literature on breast cancer and oral contraceptives has determined that pill use is associated with a small increased risk of developing breast cancer, but this increase, if any, is restricted to current or recent users²⁰ (see Box 2, p. 12).

Box 1

Progestin-only Pills (“minipills” or POPs)

Progestin-only pills (POPs) are different from combined oral contraceptives (COCs) in that they contain only a progesterone-like hormone, instead of both progesterone and estrogen. POPs prevent pregnancy by suppressing ovulation in many women.¹ They also alter the cervical mucus, making it difficult for sperm to enter the uterus. They are used by only a small proportion of women who use hormonal contraception. Progestin-only pills are slightly less effective than COCs: 99.5 percent effective if used correctly and consistently and about 95 percent if used typically.² Like COCs, progestin-only pills can be used for emergency contraception (see p. 13).

Women who cannot use COCs because they smoke or are at risk for cardiovascular problems like high blood pressure may be able to use progestin-only pills. Some women do not like using POPs, because while using them the menstrual cycle becomes irregular or stops. Although this is not risky and does not present health problems, it can be distressing to some women.

Women who breastfeed can use progestin-only pills because unlike COCs, use of POPs does not reduce the quantity and quality of breast milk (see Box 3, p. 14). Indeed, because breastfeeding can also protect against pregnancy, use of progestin-only pills while breastfeeding virtually eliminates the risk of pregnancy.

Sources:

1. Family Health International, *Mechanisms of the Contraceptive Action of Hormonal Methods and Intrauterine Devices (IUDs)* (Research Triangle Park, NC: Family Health International, April 1998).
2. R. A. Hatcher, et al., *Contraceptive Technology*, 17th ed. (New York: Ardent Media, Inc., 1998).

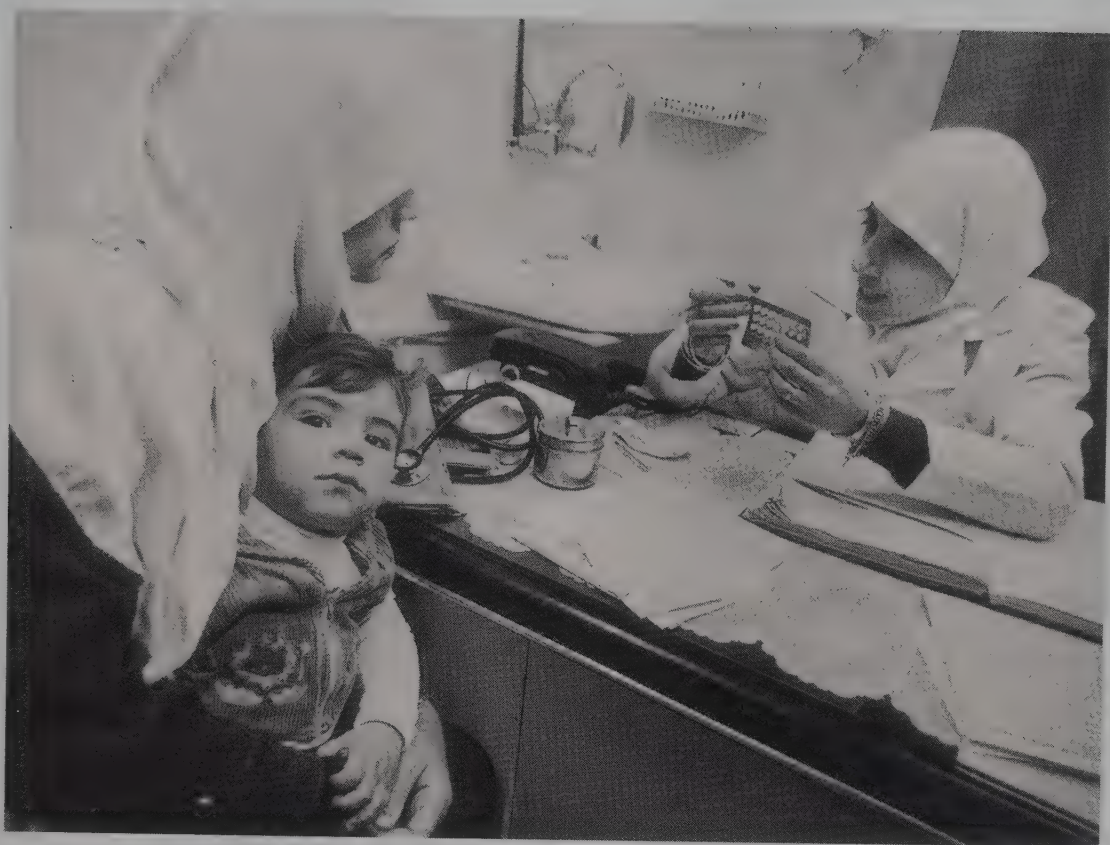


Photo: Philip Wolmuth/Panos Pictures (Jordan)

Rumor – “Your baby may be damaged if you have used the pill.”

Reality – This issue has been widely studied and evidence from several reports shows that a child conceived during or after a mother’s use of oral contraceptives is no more likely to be harmed than the average newborn.²¹

Rumor – “Use of the pill increases the risk of getting or spreading HIV.”

Reality – This is still being studied. Most importantly, the pill does not protect against HIV infection, so condoms must also be used for protection.

Side Effects—Possible side effects include menstrual spotting or missed periods, nausea, mild headaches, breast tenderness, slight weight gain or loss, and mood changes. In some countries as many as 50 percent of women who start taking pills stop within one year, primarily because of these side effects.²² Most side effects are temporary and those who are adequately counseled about side effects and offered support are less likely to drop the method.²³

Other Drawbacks—Pills must be taken every day. If not, a woman may risk pregnancy depending on how many and when pills were missed. Some women may have difficulty remembering to take pills, and lack of access to a regular source of supplies or an increase in cost can lead to irregular pill taking. Clients need to be counseled on what to do if they miss pills, as well as be informed about emergency contraceptive pills (see p. 13). Also, pills (like all hormonal methods) do not protect users against STIs, including HIV, so those needing STI protection should consider using condoms in addition to pills. COCs can reduce a mother’s milk supply, so breastfeeding mothers are advised not to use these pills within the first six months after giving birth (see Box 3, p.14, and Table 4, p. 29).

Box 2

Combined Oral Contraceptive Pills and Cancer

Cancer is not a single disease — there are different types of cancer that affect different parts of the body. It has been shown that combined oral contraceptives (COCs) provide protection against two of the four major female reproductive cancers: cancer of the ovary and cancer of the endometrium (lining of the uterus).¹ There is less certainty about pills' relationship to the other two: cancers of the breast and cervix.

The best information on breast cancer shows that it is not caused by pills, but there is a small increased risk of breast cancer associated with current or recent use. It is uncertain whether pills increase the risk of breast cancer in current and recent users, or if users are just more likely to have existing tumors detected.² Use of pills has not been shown to cause cervical cancer, but some studies have shown an association between the two, especially among women who test positive for human papilloma virus. This association may be due to increased surveillance and detection and lack of barrier method use.³ The general consensus among experts is that the risk of both breast and cervical cancers due to use of COCs, if any, is small.

Finally, some studies in more developed countries suggest a possible link between liver cancer and COC use. Nonetheless, the incidence of liver cancer is exceedingly rare in more developed countries, with or without use of COCs, and if there is an increased risk of liver cancer in COC users, experts believe the risk is very small.⁴ Data from a study in eight developing countries found no increased risk of liver cancer with short-term (less than three years) COC use.⁵

Sources:

1. J.J. Schlesselman, "Net Effect of Oral Contraceptive Use on the Risk of Cancer in Women in the United States," *Obstetrics and Gynecology*, 85 (5 part 1) 1995: 793-801.
2. Collaborative Group on Hormonal Factors in Breast Cancer, "Breast Cancer and Hormonal Contraceptives: Further Results," *Contraception*, 1996; 54 (3 Supplement):1S-31S; W.A. Van Os, D.A. Edelman, P.E. Rhemrev, S. Grant, "Oral Contraceptives and Breast Cancer Risk," *Advances in Contraception*, March 13, 1997 (1): 63-9.
3. N. Muñoz and F.X. Bosch, "The Causal Link Between HPV and Cervical Cancer and Its Implications for Prevention of Cervical Cancer," *The Bulletin of the Pan-American Health Organization*, December 1996, 30 (4): 362-77; D.B. Thomas and R.M. Ray, "Oral Contraceptives and Invasive Adenocarcinomas and Adenosquamous Carcinomas of the Uterine Cervix," *American Journal of Epidemiology*, 144 (3) 1996: 281-9.
4. J.J. Schlesselman, "Net Effect of Oral Contraceptive Use on the Risk of Cancer in Women in the United States," *Obstetrics and Gynecology*, 85 (5 part 1) 1995: 793-801; L.E. Waetjen, D.A. Grimes, "Oral Contraceptives and Primary Liver Cancer: Temporal Trends in Three Countries," *Obstetrics and Gynecology*, 88 (6) 1996: 945-9.
5. WHO Collaborative Study of Neoplasia and Steroid Contraceptives, "Combined Oral Contraceptives and Liver Cancer," *International Journal of Cancer* 43, 1989: 254-259.

Emergency Contraceptive Pills (ECPs)

Millions of women worldwide have used oral contraceptive pills in “emergency” situations to avoid pregnancy.²⁴ A woman takes two high-dose (or four low-dose) combined oral contraceptives (or other pills with the same levels and types of estrogen) within 72 hours of unprotected intercourse, then a second dose of these pills 12 hours later. Women can also take progestin-only pills for emergency contraception (20 Ovrette pills or two Postinor pills).²⁵ Although the exact mechanism of action of emergency contraceptive pills (ECPs) is not known, they primarily prevent or delay ovulation.

ECPs can be used by women whose condoms break, who run out of other contraceptive methods, who forget to take several consecutive oral contraceptives, who were not planning to have sex, or who have been raped. Adolescent women may be more likely to forget their regular method, may not have a method on hand, or may have unplanned sex, and thus can benefit from ECP use. COCs used for emergency contraception reduce a woman’s chance of pregnancy by 57 percent, and progestin-only emergency contraception by 85 percent.²⁶ Effectiveness of either type of ECP is greater the sooner they are taken after unprotected sex. Women taking progestin-only ECPs are less likely to become pregnant and less likely to experience nausea and vomiting than women taking COC-based ECPs.

Advantages

Main Benefits—ECPs are a simple, effective, convenient form of protection that women can use to minimize the chance of pregnancy when they do not use their regular method or their regular method fails. They offer a woman who has had unprotected sex against her will or unexpectedly a way to avoid a possible pregnancy.

Disadvantages

Medical Risks—Because the amount of pills used in emergency situations is so small, all women can safely take ECPs.²⁹ In 1997, the U.S. Food and Drug Administration formally stated that COCs are safe and effective for use as emergency contraception.³⁰

Side Effects—The most common side effects are nausea and vomiting. One-half of the women who use COC-based emergency contraception and 23 percent of those using progestin-only ECPs experience nausea. Vomiting is also more common among women taking COC-based ECPs (19 percent) than among those taking progestin-only pills (6 percent).³¹ Taking anti-nausea medication one-hour prior to taking the pills may alleviate the nausea.³² Also, women may experience some irregular bleeding, breast tenderness, headache, or dizziness that usually goes away within a day or two.³³

Other Drawbacks—ECPs should not be used as a routine contraceptive method, because other methods are more effective when used regularly. ECPs do not protect a woman for the rest of the month in which she took the pills; she must use other protection. In addition, ECPs do not protect against STIs, including HIV.

Rumor—“Emergency contraception is an abortion.”

Reality—ECPs work within the first three days after unprotected sex. Pregnancy, which most people consider to be the implantation of a fertilized egg, does not begin until about five days after fertilization. While research shows that ECPs have an effect on the endometrium, it has not been established that ECPs can prevent implantation after fertilization has occurred. Emergency contraception will not interrupt a pregnancy once it has been established.

Rumor—“If emergency contraception fails, I will have a damaged baby.”

Reality—There is no evidence that ECPs cause birth defects in the event that they fail. Studies have shown that receiving this emergency dose of hormones during early pregnancy is not associated with fetal malformations.²⁷ There are also no known harmful effects of ECPs when used while breastfeeding.²⁸

Rumor—“Emergency contraception can be used as a woman’s regular method of family planning.”

Reality—Because ECPs frequently cause nausea and vomiting, and because they are less effective over time than other regularly used contraceptive methods, they should only be used as an “emergency” method.

Rumor – “If I take emergency contraceptive pills, I will be protected from pregnancy for the rest of the month and my period will start soon after I take them.”

Reality – ECPs are taken to prevent pregnancy from a specific act of sex. If a woman plans to have sex again, she needs to use another method immediately after taking ECPs to avoid a further chance of pregnancy.

Box 3

Hormonal Contraceptives and Breastfeeding

Breastfeeding provides ideal nutrition for infants and can also serve as contraception for women who practice the Lactational Amenorrhea Method or LAM (see p. 33). LAM can be an effective way to avoid pregnancy, but it is temporary and depends on several factors to be effective. Women who supplement breastfeeding with other food and liquid will need to use another method to prevent pregnancy.

Research has shown that contraceptive methods containing both the hormones estrogen and progesterone (combined oral contraceptives and monthly combined injectables) cause no known direct or lasting ill effects on breastfed babies. However, early use of combined pills can reduce a mother's milk supply, denying her infant needed nutrition. Therefore, these methods are not recommended for breastfeeding mothers until six months after delivery.¹

Contraceptives that contain only progesterone-like hormones – POPs, long-acting injectables (Depo-Provera® and Noristerat®) and implants – do not suppress milk supply nor do they have any ill effects on breastfed infants. Breastfeeding mothers can begin these kinds of contraceptives six weeks after delivery.² None of the other contraceptive methods have ill effects on breastfed infants' health or mothers' milk supplies.

If a breastfeeding woman needs or wants more protection from pregnancy than provided by breastfeeding, she should first consider condoms, spermicides, IUDs, or sterilization; diaphragms, cervical caps or progestin-only methods six weeks after childbirth; and combined oral contraceptives six months after childbirth (see also Table 4, p. 29).

Sources:

1. R.A. Hatcher, et al., *The Essentials of Contraceptive Technology* (Baltimore: Johns Hopkins Population Information Program, 1997).
2. World Health Organization, *Improving Access to Quality Care in Family Planning: Medical Eligibility Criteria for Initiating and Continuing Use of Contraceptive Methods* (WHO, Geneva, 1996); K.M. Curtis and P.L. Bright, eds., *Recommendations for Updating Selected Practices in Contraceptive Use: Results of a Technical Meeting* (The Technical Guidance Working Group, I, November 1994).

Injectable Contraceptives

More than 12 million women worldwide use injectable contraceptives, mostly long-acting injectables, DMPA (depot-medroxyprogesterone acetate, brand name Depo-Provera®) and NET EN (norethisterone enanthate, brand name Noristerat®).³⁴ Like progestin-only oral contraceptives, these long-acting injectables prevent ovulation in many women and cause cervical mucus to become thick and impermeable to sperm, thus preventing pregnancy. In some countries, women are also using new once-a-month injectables called Cyclofem and Mesigyna. Unlike the longer-acting Depo-Provera® and Noristerat® injectables, these contain estrogen as well as progestin. Injectables are more than 99 percent effective in preventing pregnancies when women receive the first injection during the first seven days of their menstrual cycles.³⁶

Long-Acting Injectable Contraceptives

The long-acting injectable Depo-Provera® has been approved for contraception in more than 106 countries (including the United States in 1992) and Noristerat® in over 60 (although not in the United States).³⁸ A woman needs an injection only once every 90 days for Depo-Provera® and once every 60 days for Noristerat® to receive effective contraceptive protection, because the progesterone-like hormones are absorbed gradually by a woman's body (see Table 3, p. 16).

Advantages

Main Benefits—Injectable contraceptives are highly effective, completely reversible, and relatively long-acting. Most women and service providers find injectables to be a convenient, easy to use contraceptive method. For some women, the fact that use of the method is not linked to sexual intercourse and cannot be detected are also advantages. Long-acting injectables have no effect on lactation and can be used by breastfeeding women.

Other Positive Effects—Like oral contraceptives, long-acting injectables have other benefits beyond their effective contraceptive protection. Except for those few women who experience excessive bleeding, injectables may help to prevent anemia as menstrual bleeding stops or is diminished. Depo-Provera® has been shown to prevent sickle crises in those with sickle-cell disease. Use of Depo-Provera® is associated with an 80 percent reduced risk of endometrial cancer—a level of protection similar to that found with the use of combined oral contraceptives—a decreased risk of uterine fibroids, and with fewer ectopic pregnancies.³⁹

Disadvantages

Medical Risks—Excessive bleeding is rare, occurring in less than one in 1,000 users. Women experiencing this problem must receive immediate medical treatment to alleviate the bleeding, treat anemia if needed, and switch to another contraceptive method.⁴⁰

Rumor — “Injectables cause cancer.”

Reality — Studies show that Depo-Provera® use does not increase the risk of ovarian and cervical cancers. In fact, use of Depo-Provera® is associated with a reduced risk of endometrial cancer.³⁵ While international studies conclude that there is a very small increased risk of breast cancer just after a woman begins use of Depo-Provera®, there is no overall risk with long-term use.³⁷

Although they have not been studied as extensively as Depo-Provera® or combined oral contraceptives, studies to date show no evidence that monthly injectables cause cancer.

Rumor – “Injectable users should stop use occasionally to let blocked menstrual blood flow freely.”

Reality – Menstrual blood is not stored or blocked by use of hormonal contraceptives. If it stops (and the user is not pregnant), this means that the levels of certain hormones in the body were not sufficient to stimulate growth of the uterine lining during that menstrual cycle. It is neither dangerous nor risky for a woman to stop having her monthly bleeding during use of injectables. In fact, the absence of bleeding can help prevent anemia or its aggravation.

Rumor – “Using an injectable will hurt my baby if I get pregnant.”

Reality – Because injectables are so effective at preventing pregnancy, there is little risk of fetal exposure to the drug. In the rare event of fetal exposure to injectables, however, the hormones have not been shown to have a harmful effect on the fetus.⁴⁶

Side Effects – The main side effect of long-acting injectable use is a disruption of the menstrual cycle. Most women using injectables experience some variation in their regular bleeding pattern—including amenorrhea (no menstrual periods, which occurs in about 50 percent of Depo-Provera[®] users in one year), prolonged light bleeding (which is more common with Noristerat[®], or spotting).⁴¹ While not harmful to women, irregular menstrual bleeding can be annoying and may be culturally unacceptable. It is the reason that users often give for discontinuing this method. In addition, a small number of women using injectables experience mood changes, weight gain, headache, abdominal cramping, or breast tenderness.⁴² Although bothersome, these problems are not medically harmful and stop when the method is discontinued. The number of women who discontinue injectables and the psychological distress caused by side effects could be greatly reduced if all women receiving contraceptive injections were adequately counseled about what problems they might have and what changes to expect in their menstrual cycles.⁴³

Other Drawbacks – Clients must not be more than two to four weeks late in receiving their trimonthly injection of Depo-Provera[®] and no more than one to two weeks late in receiving their bimonthly Noristerat[®] injection, or they will be at far greater risk of pregnancy.⁴⁴ Sterile syringes are required to prevent infection. Depo-Provera[®] and Noristerat[®] do not protect against STIs, including HIV. Also, if a woman changes her mind after her first injection of Depo-Provera[®], she will have to wait several months until her normal fertility returns. Although the return to fertility after discontinuing Depo-Provera[®] is longer than with COCs and nonhormonal methods, on average women get pregnant nine to ten months after their last injection.⁴⁵

Table 3

Comparison of DMPA and NET EN

	DMPA	NET EN
Effectiveness	No significant difference	
Bleeding	More absence	More irregular
Needle size/pain	Smaller/less	Larger/more
Reinjection window	2-4 weeks early or late	1-2 weeks early or late
Duration	3 months	2 months
Cost	Less expensive	More expensive

Source: Family Health International, “Injectables,” *Contraceptive Technology Update Series* (Research Triangle Park, NC, 1994).

Monthly Injectable Contraceptives

The once-a-month injectables Cyclofem and Mesigyna are effective, convenient, and fully reversible methods of contraception.

Advantages

Possible Medical Benefits—Although not much is known about the specific effects of monthly injectables, it is conceivable that use of Cyclofem and Mesigyna reduce the risks of endometrial and ovarian cancer.⁴⁷

Other Positive Effects—As with long-acting injectables, use of monthly injectables is not linked to sexual intercourse, and the methods can be used privately.

Disadvantages

Medical Risks—Recent studies have found no clinical health risks associated with use of monthly combined injectables.⁵¹ Based on what is known about COCs, women who are at risk for cardiovascular disease, such as those with high blood pressure or those who smoke, may be at greater risk for cardiovascular problems than if they used another nonestrogen contraceptive method. Similarly, women with breast cancer should not use monthly injectables because the method could worsen the condition.⁵²

Side Effects—Initially, monthly injectables can cause irregular bleeding or spotting in some women, though this is less common than for users of long-acting injectables.

Other Drawbacks—The necessity to return each month for an injection may be inconvenient or impossible for some users. Some women may forget to return every month on time. Women need clear information about the risk of pregnancy if they miss even one injection. They also need to know that monthly injectables do not protect against STIs, including HIV.

Rumor—“Injectables cause permanent infertility.”

Reality—There is no evidence that injectables cause infertility. On average it takes about four months longer for a woman’s normal menstrual cycle and fertility to return after discontinuing Depo-Provera® than for women using COCs, IUDs, condoms or other barrier methods.⁴⁸ Studies have shown that on average, women get pregnant nine to 10 months after the date of the last Depo-Provera® injection.⁴⁹ A recent study shows that over 80 percent of women who discontinued use of the once-a-month Cyclofem became pregnant within one year.⁵⁰



Contraceptive Implants

An estimated 6 million women worldwide use Norplant® subdermal implants.⁵³ This method has been approved for use in 60 countries, including the United States. The six small, rubber-like capsules inserted under the skin in the arm slowly release progestin, the same type of hormone used in many injectables, COCs, and POPs. Like other progestin-only methods, Norplant® prevents pregnancy by suppressing ovulation and by thickening the cervical mucus, thus preventing sperm from reaching the egg. The capsules are more than 99 percent effective in preventing pregnancy during the five years they can be left in place.⁵⁴ Research indicates they may be effective up to seven years.

Advantages

Main Benefits—Because implants are effective for at least five years and fully reversible at any time by having the capsules removed, women find them a convenient and simple method of avoiding pregnancy.⁵⁵ Norplant® is a good choice for breastfeeding women beginning six weeks after delivery (see Table 4, p. 29).

Other Positive Effects—For most Norplant® users, menstrual blood loss is reduced, which can help prevent anemia or its aggravation. Additionally, there are no estrogen-like hormones in the implants so the user need not worry about estrogen-related side effects.

Disadvantages

Medical Risks—Although for most women monthly blood loss is greatly reduced when they use Norplant®, in rare cases women experience prolonged or heavy menstrual bleeding, which may lead to anemia.

Side Effects—Between 70 and 80 percent of Norplant® users experience irregular menstrual bleeding including spotting, longer periods, cessation of bleeding, or a combination of these patterns. Although many of these irregularities decline during the first year a woman uses Norplant® and are not medically serious, irregular bleeding is the main reason women give for having the capsules removed before five years. Menstrual flow sometimes stops altogether. This can be alarming to women who are not adequately counseled about possible changes in bleeding patterns, or unacceptable due to cultural and social beliefs and practices, although it is not harmful to health.

Other side effects experienced by a small percentage of women include headaches, dizziness, mood changes, nausea, rashes, acne, weight gain, and breast tenderness, similar to other progestin-only methods. In rare cases, an implant user may experience a headache severe enough to make it worthwhile for her to have the method removed. Also, there is a minimal chance of infection immediately following insertion, or more commonly, with difficult removals. Providers should be well trained in proper aseptic insertion and removal techniques.

Rumor—“The implant capsules will move around in my body.”

Reality—Implants are inserted just under the skin and can be felt at any time by lightly touching the skin above where they were inserted, usually in the inner part of the upper arm. The implants cannot move to another part of a woman's body. In rare instances, if they are incorrectly inserted, they can move around slightly within the upper arm or come through the incision site.

Rumor—“Heavy women should not use Norplant®.”

Reality—There are no weight restrictions for Norplant® users. Heavier women (weighing more than 70 kg. or 154 lbs.) may be at greater risk of pregnancy in the fourth and fifth years of use, but because Norplant® is so effective at preventing pregnancy, the risk is still lower than with pills.⁵⁶

Rumor – “If I am pregnant while an implant is in my arm, the baby will be damaged.”

Reality – In the extremely unlikely event of a pregnancy while using Norplant®, it is recommended that a woman have the implants removed and that she seek medical care immediately because about 30 percent of such pregnancies are ectopic.⁵⁷ But, like progesterin-only pills and injectables, there is no known harm to mother or fetus if Norplant® is used during pregnancy.⁵⁸

Rumor – “Insertion and removal of Norplant® is a long and painful surgical process that will permanently damage my body.”

Reality – Although some women have had the implants inserted too deeply into the arm, which can make the capsules difficult to remove, recent improvements in insertion and removal techniques have made this problem less common. The majority of users in research studies have not reported excessive difficulty or pain during insertion or removal.

Rumor – “Implants cause cancer.”

Reality – There is no medical evidence that Norplant® causes any type of cancer.



Photo: Marc Schlossman/Panos Pictures (Dem. Rep. of Congo)

Other Drawbacks—Implants cannot be removed by the woman herself, so she must have access to a trained health care provider if she needs or wants to discontinue using the method. In some instances, women have difficulty finding clinicians to remove the implants. And even health care providers themselves occasionally have trouble removing the implants, especially if the implants have been inserted too deeply. This can mean a longer than anticipated clinic visit and sometimes require the client to return to have some of the implants removed another day. If the removal technique is inadequate, scarring can result. Finally, Norplant® does not protect against STIs, including HIV, making it important that women at risk of infection use condoms in conjunction with Norplant®.

Intrauterine Devices (IUDs)

More than 109 million women worldwide use IUDs.⁵⁹ They are inserted into the uterus where they prevent pregnancy. There are several types of IUDs: some are plastic, some are wrapped with copper, and others slowly release hormones. The copper IUD is one of the most effective contraceptive methods available: among women using the Copper-T380A, less than 1 percent will become pregnant in the first year of use.⁶⁰ Copper IUDs prevent sperm from reaching the uterine cavity and the fallopian tubes where fertilization takes place; the copper is also toxic to sperm.⁶¹ The Copper-T380A can be left in place and is effective for at least 10 years.

Advantages

For many women, the IUD is a convenient, very effective, long-acting contraceptive method. Once inserted, a woman need do nothing else to take advantage of the IUD's effectiveness except regularly check to make sure the IUD is still in place (by feeling for the string). Once the IUD is removed, a healthy woman's fertility returns immediately. Use of the IUD does not interfere with a couple's intimacy, although a few women report that their partner can feel the string. The IUD is a good postpartum method: it can be inserted by trained health personnel up to 48 hours after childbirth, and IUDs can be used by breastfeeding women (see Table 4, p. 29).

Disadvantages

Medical Risks—If a woman using an IUD has a sexually transmitted infection (STI), she is more likely to get pelvic inflammatory disease (PID). The risk of PID has also been found to be greater during the 20 days following insertion of an IUD, yet the risk is small, especially in situations where STIs are rare.⁶² IUDs are not a good method for women who currently have or recently have had PID or an STI, including HIV.

Because pelvic infections and STIs can lead to infertility, women at risk of STIs (those with multiple partners or whose partner has multiple partners) should be counseled to use condoms and should not use IUDs unless no other method is available or acceptable.⁶⁴

Three problems can occur in the rare instances women become pregnant while using IUDs (0.1 percent to 2 percent).⁶⁵ There is a 40 percent to 50 percent chance of miscarriage;⁶⁶ severe infection can result; and 3 percent to 4 percent of these pregnancies are ectopic—a life-threatening pregnancy outside the womb.⁶⁷ However, due to its high effectiveness, overall the copper IUD provides 14 times more protection against ectopic pregnancy than using no method.⁶⁸ In addition, the IUD in some cases induces heavy bleeding over time, a condition that could lead to or aggravate anemia.

Rumor—“If a woman uses an IUD, she will never be able to have a baby.”

Reality—Almost all women who use the IUD will be able to bear children after they have the device removed. Women who already suffer from pelvic (not vaginal) infections or who have or are exposed to STIs do face a higher risk of infertility and should not use the IUD.

Rumor—“The IUD is only for older women who have already had a child.”

Reality—Even a young woman who has never had a child may use the IUD, as long as she is not exposed to STIs. However, because younger women may be less likely to have mutually faithful sexual partners, they may be at higher risk for STIs, which can cause infertility in IUD users. Although this is not a reason to prevent them from using IUDs, younger women may want to use a different method. It is important that providers explain all the risks clearly to women interested in using an IUD.⁶³

Rumor – “The IUD can travel throughout a woman’s body. It may be pushed in during sexual intercourse and will even lodge in other parts of her body.”

Reality – An IUD cannot be pushed out of the uterus during sexual intercourse and only rarely (in fewer than 1 percent of cases) does an IUD wound or perforate the woman’s uterus when it is being inserted. In the rare event that a perforation does occur, it should be removed to prevent complications.⁶⁹

Rumor – “If a woman becomes pregnant while using an IUD, it becomes embedded inside her baby’s body, even its brain.”

Reality – The IUD cannot become embedded in a baby or cause a malformation in the rare event that a pregnancy occurs with the IUD in place. The very few women who become pregnant while using an IUD do face an increased risk of miscarriage, infection, and ectopic pregnancy and should have the IUD removed immediately.



Photo: Sean Sprague/Panos Pictures (Thailand)

Other Drawbacks – Increased menstrual bleeding, often with cramping, is the most common problem with IUD use. Between 10 percent and 15 percent of women have the IUD removed for this reason, although users of the progestin-releasing IUD are less likely overall to have bleeding problems.⁷⁰ Some women find the required internal pelvic examination, the insertion of the device, and the carrying of a foreign object in their womb to be unacceptable. A few women experience discomfort from the insertion and removal of the IUD. IUD users should check monthly for the string that indicates that the IUD is still in place, because up to 10 percent of users spontaneously expel their IUD within the first year, although the expulsion rate of the Copper-T380A is lower.⁷¹

Condoms

Condoms are thin natural latex rubber, synthetic plastic, or polyurethane sheaths that provide a physical barrier to prevent the man's sperm from entering the woman's uterus. There are two different types of condoms, male and female. The male condom is placed over the man's penis before sexual intercourse. The female condom (also called Femidom, Reality, or Care) is put inside the woman's vagina before intercourse.

One of the oldest and most common methods of contraception, the male condom is used by 50 million men around the world.⁷² As typically used, it is about 86 percent effective but can be up to 97 percent effective in preventing pregnancy if used correctly and consistently.⁷³ The female condom, approved for use in the United States in 1993, is becoming more available worldwide. It is between 79 percent and 95 percent effective in preventing pregnancy.⁷⁴

Advantages

The male latex condom is the only contraceptive proven to prevent the spread of HIV and other STIs if used correctly and consistently. It is likely that the female condom provides similar protection against the spread of these diseases, and because it covers the outside of the vagina, it may provide extra protection. In addition, the female condom is a woman-initiated method that provides protection against pregnancy and STIs, including HIV. In situations where negotiation of male condom use is difficult, female condoms can provide effective protection if used correctly and consistently. Because male condoms reduce sensation for some men, they can also reduce premature ejaculation.

The female condom and new male condoms made of plastic-like material are stronger and thinner than latex rubber and are meant to provide resistance to breaking while simultaneously reducing the risk of an allergic reaction and increasing pleasure.

Male condoms are inexpensive, readily available, and like the female condom, do not require a visit to a health provider. Condoms are a good option for many sexually active adolescents.

Disadvantages

Medical Risks—Very rarely a man or a woman may be allergic to latex rubber, the material that most male condoms are made of, although the female condom and some newer male condoms are made of polyurethane and other plastics. Although usually not serious and immediately reversible, the swelling, rash, and itching associated with an allergic reaction can be annoying.

Other Drawbacks—To be effective, the condom must be used every time a couple has intercourse, and some men find that male condoms reduce the pleasure of intercourse. Each condom can only be used once. Condoms occasionally break or slip, but storing a condom away from heat, avoiding oil-based lubricants, and leaving a small, air-free reservoir at the tip of male condoms help to prevent these problems. Backup ECPs (see p. 13) can be provided along with condoms in case of failure. At present, female condoms are more expensive than male condoms and are less widely available.

Rumor—*"The condom comes off or breaks during sexual intercourse and permanently lodges inside the woman's body."*

Reality—*Both male and female condoms do occasionally break. The male condom can slip off inside the woman's vagina but she can remove it. Proper storage and avoidance of oil-based lubricants prevent the deterioration of condoms, a major cause of breakage. In addition, if a man and woman receive proper instruction on condom use, they can minimize the possibility of its breaking or slipping off.*

Rumor—*"Male condoms will weaken a man's strength, which may result in impotence."*

Reality—*A few men may have trouble keeping an erection while using male condoms, but condoms themselves do not cause impotence. Many men, in fact, find that condoms help them keep an erection longer and reduce premature ejaculation.⁷⁵*

Rumor—*"Condoms are only used with prostitutes."*

Reality—*Condoms are regularly and safely used by millions of couples to prevent pregnancy. In Japan, for example, male condoms are the most popular contraceptive method among married couples. Because of the risk of HIV and other STIs, however, it is especially important for those with multiple partners, or whose partners have multiple partners, including sex workers, to use condoms.*

Spermicides

Spermicides, such as nonoxynol-9 (N-9), are chemicals which, when inserted in the woman's vagina before sexual intercourse, kill the man's sperm and may also kill viruses and bacteria that cause disease. They are used by a relatively small percentage of couples.⁷⁶ Spermicides are available in different forms, including foam, film, creams, gels, and tablets. Some are used together with diaphragms, cervical caps, and condoms. Used alone, spermicides are typically 74 percent effective against pregnancy but can be as high as 94 percent effective if used correctly and consistently.⁷⁷

Advantages

Spermicides are widely available, and can be obtained without having to visit a health provider. Spermicides, which are used only as needed, may be appropriate for couples who do not need continuous protection, for example, couples who do not have sexual intercourse frequently.

N-9 alone provides modest protection against bacterial STIs such as gonorrhea and chlamydia. However, if there are multiple acts of intercourse per day, spermicides alone may not provide protection against STIs, and they do not protect against HIV.⁷⁸

Disadvantages

Medical Risks—No major medical risks are associated with spermicides. However, a link exists between urinary tract infections and use of spermicide and condoms lubricated with spermicides.⁷⁹

Side Effects—Spermicides can occasionally cause physical discomfort, such as burning or itching, due to an allergic reaction.

Other Drawbacks—Some women find spermicides “messy.” As spermicides must be applied just before or during sexual activity, they require the woman or couple to be prepared with a ready supply prior to intercourse. Lastly, as commonly used, spermicides are less effective at preventing pregnancy than many other contraceptive methods.



Photo: Mark Edwards/Still Pictures (Peru)

Female Barrier Methods

Female barrier methods such as the diaphragm and cervical cap are used by fewer than 1 percent of contraceptive users worldwide.⁸⁰ The diaphragm and cervical cap physically block the cervix—the opening of the woman's uterus—and stop sperm from reaching the egg. Both the diaphragm and cervical cap are used with a spermicide. Depending on whether it is used correctly at each act of intercourse, the diaphragm is between 80 percent and 94 percent effective in preventing pregnancy. The cervical cap is more effective among women who have not had children (80 percent to 91 percent), than among those who have given birth (60 percent to 74 percent).⁸¹

Advantages

Female barrier methods are immediately reversible and cause no changes in a woman's monthly cycle. Studies show that diaphragms used with spermicide provide some protection against sexually transmitted infections, such as gonorrhea, chlamydia, and trichomoniasis.⁸³ For women who prefer a barrier method, but do not want to use male or female condoms, a diaphragm or cervical cap with spermicide may be good options. Because cervical cancer is linked to a sexually transmitted virus, female barrier methods and spermicides provide some protection against cervical cancer.⁸⁴

Disadvantages

Medical Risks—No medical risks are associated with barrier methods. However, a link exists between urinary tract infections and use of diaphragms.⁸⁷

Side Effects—Diaphragms and spermicides can occasionally cause physical discomfort due to poor fit or an allergic reaction.

Other Drawbacks—A diaphragm can be inserted well before sexual intercourse, but additional spermicide is needed if it is inserted more than six hours before intercourse. Diaphragms should be left in place for six hours after intercourse and should be removed no longer than 24 hours after insertion. They also require proper cleaning and storage. Use of a diaphragm or cervical cap requires a visit to a trained health provider for proper selection and fitting. Women need to be refit for a diaphragm after childbirth. Diaphragms and cervical caps are less effective at preventing pregnancy than many other contraceptive methods.

Rumor—“Spermicides lead to damaged babies.”

Reality—Medical evidence does not support this fear. Although some small-scale, early studies did suggest a possible relationship, larger and more recent studies show that there is none. In fact, it is considered safe to use spermicide during pregnancy to help prevent STI infection.⁸²

Rumor—“Barrier methods and spermicides cause cervical cancer.”

Reality—In fact, barrier methods may protect against cervical cancer. The human papilloma virus has been identified as the primary cause of cervical cancer.⁸⁵ Spermicides have antiviral properties and barrier methods cover the cervix; thus, both may prevent the virus from harming the cervix.⁸⁶

Sterilization

Rumor – “After a sterilization a woman will have a pregnancy outside the womb.”

Reality – In the uncommon instance of a pregnancy occurring after sterilization, there is an increased risk that it will be an ectopic pregnancy. Sterilized women who suspect they might be pregnant need to seek immediate medical attention to rule out this dangerous condition. Nonetheless, sterilized women are at less risk of an ectopic pregnancy than women who do not use contraception.

Rumor – “Sterilization makes a woman fat.”

Reality – There is no evidence that sterilization causes women to gain weight. Because many women get sterilized in their 30s or 40s, ages when some women also gain weight, they associate the weight gain with sterilization. Reassuring women that sterilization does not affect weight or sexual function in any way can reduce anxiety about the procedure.

Rumor – “Sterilization makes a woman weak.”

Reality – There is no medical support for this rumor. Many studies of the differences between women who have had sterilization operations and those who have not have found no difference in strength, gynecological problems, or psychological adjustment.⁹³

Throughout the world, an estimated 162 million women of childbearing age depend on voluntary female sterilization and another 44 million men depend on vasectomy, which is voluntary sterilization for men.⁸⁸ Sterilization is an effective way to prevent pregnancy for both men and women who want no more children.⁸⁹ Because the procedures are intended to be permanent, counseling is a critical aspect of providing these methods.

Female Sterilization

Voluntary female sterilization is the world's most widely used contraceptive method. Two simple surgical procedures, minilaparotomy and laparoscopy, can be performed within 20 minutes, often with local anesthesia, and do not require a hospital stay. Both procedures involve a trained health professional who makes a small incision in the abdomen and either cuts or blocks the tubes that carry eggs from the ovaries to the uterus. This prevents sperm and egg from meeting. Female sterilization by minilaparotomy can also be performed immediately after or within seven days of childbirth.

Female sterilization is at least as effective as most other long-acting methods of contraception (Copper-T380A, Norplant®, and Depo-Provera®). Fewer than 1 percent of sterilized women (55 per 1,000) become pregnant during the first year after the procedure.⁹⁰ A recent study of sterilized women in the United States found that the cumulative risk of pregnancy over 10 years is 18 per 1,000 women, although the risks vary based on the age of the woman at the time of sterilization and by the technique used.⁹¹

Advantages

After female sterilization, a woman is mostly free of concern about having additional children, from any further health risks related to pregnancy, and from the inconvenience and expense of using a temporary method of family planning. Additionally, sterilized women may have a slightly reduced risk of ovarian cancer.⁹²

Disadvantages

Medical Risks – Complications are very rare in female sterilization when the surgery is performed using standard techniques and following standard anesthesia and infection-prevention protocols. Major complications such as abdominal injury, anesthesia-related complications, infections, hemorrhaging, and cardiovascular problems are reported in fewer than 1 percent of cases. Deaths due to female sterilization are very rare, even in remote, resource-poor geographic areas.



Photo: Paul Harrison/Panos Pictures (Brazil)

In the unlikely event that a sterilized woman becomes pregnant, she has a high risk of ectopic pregnancy, even many years after the procedure.⁹⁴ However, because sterilization is so effective, a sterilized woman has a much lower risk of ectopic pregnancy than a woman using no contraceptive method. Sterilized women should be counseled to seek immediate medical care if they suspect they are pregnant.

A small percentage of women, usually younger women or women who remarry, later regret their sterilization, which cannot be reversed except by expensive, complex operations that are not always successful.⁹⁵

Side Effects—Occasionally (fewer than 5 percent of cases) a woman experiences post-operative infection or bleeding, but these problems are easily remedied by medical attention. Minor pain after the operation is common but temporary. Sterilization is permanent.

Other Drawbacks—Sterilization does not protect against STIs, including HIV.

Male Sterilization (Vasectomy)

Vasectomy, the sterilization procedure for men, blocks small tubes—the *vas deferens*—to prevent sperm from entering a man's semen. This very safe, simple procedure is 99.9 percent effective in preventing pregnancies. A new no-scalpel technique does not use a surgical knife, involves less pain and bruising, and has a shorter recovery time. After a brief physical examination, a vasectomy requires only local anesthesia and takes 15 minutes or less.⁹⁶

Rumor—“Female sterilization is a painful, complicated operation.”

Reality—New techniques developed since 1960 have made female sterilization possible without a hospital stay, by using local anesthesia. Women often feel some pain after the procedure is over. However, this discomfort is normally temporary and minor enough so that most women can relieve it with standard treatments like aspirin.

Rumor—“After a sterilization a woman will not have menstrual periods.”

Reality—This issue has been thoroughly studied in both more developed and developing countries and there is no evidence of menstrual disruption in sterilized women. Sterilization should not be confused with hysterectomy, the surgical removal of a woman's uterus, which leads to cessation of menstrual bleeding.

Rumor—“Vasectomy is really a fancy name for castration.”

Reality—Vasectomy only involves the blocking or tying off of two small tubes in the scrotum, not the removal of any glands or organs. Vasectomy in no way resembles castration and has no effect on male hormone levels.

Rumor – “A sterilized man cannot perform sexually.”

Reality – The operation does not affect sexual performance. After a vasectomy, the man’s body continues to produce male hormones needed for erections and his feeling at ejaculation will be entirely normal. Some men claim that vasectomy increases their sexual pleasure because there is no fear of pregnancy.

Rumor – “Vasectomy causes cancer.”

Reality – Although two earlier studies found a slightly increased risk of prostate cancer, the wealth of evidence indicates that vasectomy does not cause prostate or testicular cancer nor any other long-term health problems.⁹⁹

Rumor – “A vasectomy can cause heart problems and harm the immune system.”

Reality – This rumor grew out of early studies using monkeys to research the effects of vasectomy. However, subsequent studies in humans demonstrate there is no increased risk of either cardiovascular disease or immune system problems.¹⁰¹

Rumor – “After a vasectomy men can no longer do physical labor.”

Reality – As with female sterilization, the medical procedure has no effect on a man’s overall health and physical ability. After a short recovery period, men can return to their normal activities.

Advantages

A vasectomy is effective, safe, quick, simple, and inexpensive. It is simpler, more effective, and can be less costly than female sterilization. Once the minor post-operative discomforts have passed and no sperm are found in the man’s ejaculate, the man and his partner do not need to worry about contraception or unwanted pregnancy.⁹⁷

Disadvantages

Medical Risks – Virtually all surgical operations involve some risk and vasectomy is no exception, but inherent dangers are minimized by the procedure’s simplicity, use of local anesthesia, competent surgical procedures, and hygienic surroundings. Relatively minor complications, like local blood clots and infections, occur in fewer than 3 percent of all vasectomies.⁹⁸

Side Effects – Vasectomy patients may experience some swelling, discoloration, or post-operative discomfort, but these conditions are generally short-term and minor. Vasectomy should be considered permanent. While expensive surgery may successfully reverse the procedure in some cases, it does not always lead to pregnancy. Although some men may worry, adequate counseling prior to a vasectomy can reassure men that having a vasectomy will not cause impotence, change in sexual desire, or change in sexual performance.¹⁰⁰

Other Drawbacks – After vasectomy, a man is not immediately infertile. Another contraceptive method needs to be used until no sperm are found in the man’s ejaculate (about three months or 20 ejaculations after the procedure). Vasectomy does not protect against STIs, including HIV.

Table 4

When to Begin Contraceptive Methods After Pregnancy

	Immediately	Immediately or Delay	Delay Three Weeks	Delay Six Weeks	Delay Six Months
Breastfeeding Mothers	<ul style="list-style-type: none"> ■ LAM (up to six months protection) ■ Condoms ■ Spermicides ■ Sterilization 	<ul style="list-style-type: none"> ■ IUD insertion within 48 hours (by specially trained providers) or after six weeks 		<ul style="list-style-type: none"> ■ Diaphragm ■ Cervical cap ■ Sponge ■ Progestin-only methods (POP, Norplant®, Depo-Provera®) 	<ul style="list-style-type: none"> ■ Combined hormonal methods (COCs, Injectables)
Nonbreastfeeding Mothers	<ul style="list-style-type: none"> ■ Condoms ■ Spermicides ■ Sterilization ■ Progestin-only Methods (POP, Norplant®, Depo-Provera®) 	<ul style="list-style-type: none"> ■ IUD insertion within 48 hours or after six weeks 	<ul style="list-style-type: none"> ■ Combined hormonal methods (COCs, Injectables) 	<ul style="list-style-type: none"> ■ Diaphragm ■ Cervical cap ■ Sponge 	
Postabortion Women (1st Trimester)	<ul style="list-style-type: none"> ■ All methods 				
Postabortion Women (2nd Trimester)	<ul style="list-style-type: none"> ■ Condoms ■ Spermicides ■ Progestin-only methods (POP, Norplant®, Depo-Provera®) ■ Sterilization ■ Combined hormonal methods (COCs, Injectables) 	<ul style="list-style-type: none"> ■ IUD insertion within 48 hours or after six weeks 		<ul style="list-style-type: none"> ■ Diaphragm ■ Cervical cap ■ Sponge 	
Men	<ul style="list-style-type: none"> ■ Vasectomy ■ Condoms 				

Source: Family Health International, "Reproductive Health after Pregnancy," *Network*, vol. 17, no. 4 (Summer 1997).

Rumor – “Only highly educated couples can use fertility awareness-based methods”

Reality – Studies have shown that couples worldwide, both educated and uneducated, can use fertility awareness-based methods successfully if they are properly trained and highly motivated.

Rumor – “Fertility awareness-based methods don’t work.”

Reality – Fertility awareness-based methods can be effective methods of family planning if practiced correctly and consistently. Like oral contraceptives, condoms, and other user-dependent methods, the effectiveness depends on the user’s motivation to avoid pregnancy and employ the method correctly. In a multinational study of the ovulation method, 3 percent of women who used the method correctly and consistently became pregnant in one year.¹⁰² Pregnancy rates are generally higher among women practicing fertility awareness-based methods than among women using most other methods.

Rumor – “Only women with regular menstrual cycles can use fertility awareness-based methods.”

Reality – Studies have shown that most women, regardless of cycle regularity can use modern fertility awareness-based methods. The calendar method alone, however, may not be effective for women with irregular cycles.

Rumor – “Most men won’t accept abstinence during the fertile period.”

Reality – While this may be true in some circumstances, studies have shown that for most couples who choose to practice fertility awareness-based methods, the man reports that he is not particularly disturbed by the required abstinence. In some countries, couples use a modified form of periodic abstinence, using barrier methods or withdrawal during the most fertile days. Female barrier methods are not recommended when using the cervical mucus method.

Fertility Awareness-Based Methods

An estimated 32 million couples around the world practice fertility awareness-based methods of family planning.¹⁰³ To avoid pregnancy, the couple must abstain from sexual intercourse ("periodic abstinence" or "natural family planning") or use withdrawal or barrier methods of family planning ("fertility awareness-combined methods") during the time when a woman could become pregnant, a period of approximately nine days during the middle of the menstrual cycle. However, because of the imprecision of the methods, abstinence or use of other methods is usually required for about two weeks, or half of the days of the cycle.

The most commonly used method of fertility awareness is the calendar method. This method uses the duration of previous menstrual cycles to predict the most fertile days of the cycle. The practice of modern fertility awareness-based methods, such as the "ovulation" or "sympto-thermal" methods, requires the careful recording of menstrual dates and the signs and symptoms of fertility that occur during a woman's menstrual cycle. Primary signs and symptoms are changes in cervical mucus and basal body temperature. According to several international studies, the effectiveness of periodic abstinence ranges from 75 percent to 99 percent.¹⁰⁴



Photo: Richard Lord (Egypt)

Advantages

Fertility awareness-based methods are inexpensive, acceptable to all religious groups and to those who prefer not to use another family planning method, and are free of medical risks and side effects. Fertility awareness provides women with a means of understanding their bodies and of monitoring the monthly changes of their reproductive system. Couples who learn to use fertility awareness-based methods are not dependent on a contraceptive supply system or clinic.

Disadvantages

Medical Risks—No medical risks are associated with fertility awareness-based methods.

Other Drawbacks—Fertility awareness-based methods call for careful monitoring and record-keeping, and abstinence or use of withdrawal or barrier methods during about two weeks of every monthly menstrual cycle. This can require good communication and cooperation between the woman and man. Fertility awareness-based methods do not protect against STIs, including HIV.



1211 1145 1493

05661



Lactational Amenorrhea Method (LAM)

The Lactational Amenorrhea Method (LAM) depends on breastfeeding as a method of contraception. If a woman is fully or almost fully* breastfeeding an infant, has not resumed menstruating, and has given birth less than six months ago, she is between 98 percent and 99 percent protected against pregnancy.¹⁰⁵ The effectiveness drops if any of the three above-mentioned criteria are no longer met, particularly if menstrual bleeding begins.

Advantages

LAM is cost-free and acceptable to those who prefer a natural method, or who want to avoid or cannot use other methods of contraception right after childbirth. Additionally, the health of the infant is significantly improved through breastfeeding, especially in resource-poor areas where feeding options for infants may not be safe. Breastfeeding also reduces a woman's risk of postpartum hemorrhage, and provides some protection against ovarian and breast cancers.¹⁰⁷ Use of LAM does not require a woman to have a physical exam, nor does it interrupt sexual activity.

Disadvantages

Medical Risks— There are no medical risks associated with LAM.

Other Drawbacks— LAM is temporary and users are advised that it is most effective only during the six months following a birth. The risk of ovulating prior to the return of menstruation increases gradually over the months postpartum with no sudden increase at six months.¹⁰⁸ Therefore, the duration of LAM protection may extend past six months, especially in women who have not begun to menstruate, as long as they continue to breastfeed fully or almost fully. However, absence of bleeding alone is not an indicator of infertility. LAM also requires planning to ensure that when bleeding returns there is another method ready to use to avoid an unwanted pregnancy. LAM does not protect against STIs, including HIV.

Rumor— “Feeding only breast milk to an infant is harmful.”

Reality— “Exclusive” breastfeeding is not harmful to the infant. In fact, breast milk is the ideal nutrition for infants during the first six months after birth and giving the baby supplemental food or water does not improve the nutrition the baby receives. Elements in the milk provide protection against contagious diseases that often lead to infant deaths and provide lipids essential to brain development.¹⁰⁶

Rumor— “Women who are HIV-positive or at risk for HIV should not breastfeed their babies and cannot practice LAM.”

Reality— If the mother has HIV, there is a chance that her breast milk will pass the virus to the baby. For these women, the dangers of passing HIV to their infants must be evaluated against the benefits of breastfeeding. If an infant can be guaranteed access to safe, nutritionally adequate substitutes for breast milk, they may be the best choice for HIV-positive mothers to feed their infants. However, if these conditions cannot be met, and in areas where infectious diseases and malnutrition cause many infant deaths, breastfeeding may still be the best choice for HIV-positive women and their children. Women who are HIV-positive should be counseled about all of the risks and benefits of breastfeeding.

*Fully or almost fully breastfeeding means that the baby gets at least 85 percent of his or her feedings as breast milk, and the mother breastfeeds often, both day and night.

Maximizing Contraceptive Safety

All contraceptives—hormonal methods, IUDs, barrier methods, sterilization, fertility awareness-based methods, and LAM—have advantages and disadvantages. Most methods have low failure rates if used correctly and consistently and most are safe for the majority of users. All of the issues discussed in this booklet—the medical risks, the side effects, and the levels of effectiveness in protecting against pregnancy—are important factors couples need to consider in making an informed choice of method and maximizing the safety of its use. The more women and men know about contraceptive methods, the better they are able to evaluate the relative importance of each of these factors based on their childbearing goals, health status, relationship, and living conditions.

At the International Conference on Population and Development held in Cairo in 1994, the 180 countries represented agreed that the goal of family planning programs must be: (1) to enable couples and individuals to decide freely and responsibly the number and spacing of their children; (2) to have the information and means to do so; and (3) to ensure informed choices and make available a full range of safe and effective methods.¹⁰⁹ The Programme of Action adopted at the conference makes many recommendations to improve the quality of family planning services, and maximize the safety of contraception.

Education: Provide accessible, complete, and accurate information about family planning methods, including their health risks and benefits, correct use, possible side effects, and effectiveness in the prevention of the spread of HIV/AIDS and other STIs.

Choice: Ensure that women and men have full information and access to the widest possible range of safe and effective family planning methods in order to enable them to make free and informed choices.

Access: Identify and remove unnecessary legal, medical, clinical, and regulatory barriers to family planning information, services, and methods. Meet the family planning needs of all groups, including adolescents, and provide universal access to a full range of safe, affordable, and reliable family planning methods and related reproductive health services.

Supply: Strengthen procurement and logistical systems to ensure a sufficient and continuous supply of high-quality contraceptives.

Abortion: Help women and men prevent unwanted pregnancies and minimize the need for abortion through improved family planning services. Provide postabortion care, counseling, and family planning.

STIs: Promote and distribute to both men and women low-cost or free high-quality male and female condoms to reduce the spread of STIs, including HIV.

Breastfeeding: Emphasize breastfeeding education and support services.

Training: Expand and upgrade training in sexual and reproductive health care and family planning for all health care providers.

Follow-up Care: Ensure appropriate follow-up care, including treatment for side effects of contraceptive use.

Research: Increase support for research to improve existing and develop new methods that meet users' needs and are acceptable, easy-to-use, safe, free of side effects, effective, and affordable. Give priority to new methods for men.

Technical Review Panel

The authors and the Population Reference Bureau wish to thank the following review panel and many other people who took the time to comment on this document. The U.S. Agency for International Development (USAID) funded this report.

Willard Cates, Jr., MD, MPH, President, Family Health International, Research Triangle Park, North Carolina.

Barbara Crane, Senior Policy Advisor, Policy and Evaluation Division, Office of Population, Center for Population, Health and Nutrition, United States Agency for International Development, Washington, DC.

Betty L. Farrell, CNM, MPH, Senior Program Officer for Global Programs, International Women's Health Coalition, New York.

Mahmoud F. Fathalla, Professor of Obstetrics and Gynecology, Assiut University, Egypt, and Senior Advisor to the Rockefeller Foundation.

David A. Grimes, MD, Director of Medical Affairs, Family Health International, Research Triangle Park, North Carolina.

Robert A. Hatcher, MD, MPH, Professor of Gynecology and Obstetrics, Emory University School of Medicine, Atlanta, Georgia.

Monir Islam, MD, Chief, Family Planning and Population Unit, Division of Reproductive Health, World Health Organization, Geneva, Switzerland.

Judy Norsigian, Program Director, Boston Women's Health Book Collective, Somerville, Massachusetts.

Sangeeta Pati, MD, FACOG, Medical Associate, AVSC International, New York.

Allen Rosenfield, MD, Dean, Columbia School of Public Health, New York.

Pramilla Senanayake, MD, Assistant Secretary General, International Planned Parenthood Federation, London, UK.

James D. Shelton, MD, Senior Medical Scientist, Office of the Director, Office of Population, Center for Population, Health and Nutrition, United States Agency for International Development, Washington, DC.

Rachel Snow, ScD, Associate Professor for Tropical Hygiene and Public Health, University of Heidelberg School of Medicine, Heidelberg, Germany.

Jeff Spieler, Chief, Research Division, Office of Population, Center for Population, Health and Nutrition, United States Agency for International Development, Washington, DC.

Felicia H. Stewart, MD, Director, Reproductive Health Programs, The Henry J. Kaiser Family Foundation, Menlo Park, California.

Janet Turner, Research Officer, International Planned Parenthood Federation, London, UK.

Margaret Usher, Technical Adviser, Family Planning and Population Unit, Division of Reproductive Health, World Health Organization, Geneva, Switzerland.

Key Technical Sources

Selected Family Planning and Reproductive Health Web Sites

Contraceptive Research and Development (CONRAD) Program
<http://www.conrad.org/>

Emergency Contraception Website (Princeton University)
<http://opr.princeton.edu/ec/>

Family Health International (FHI)
<http://www.fhi.org>

MEASURE Program
<http://www.measureprogram.org>

National Library of Medicine
<http://www.nlm.nih.gov>

PATH
<http://www.path.org>

Population Reports, JHU-CCP
<http://www.charm.net/~ccp/poprpts.html>

Population and Reproductive Health Materials Working Group
<http://www.med.jhu.edu/ccp/>

Population Council
<http://www.popcouncil.org>

PopNet
<http://www.popnet.org>

Population Reference Bureau (PRB)
<http://www.prb.org>

United Nations AIDS Program (UNAIDS)
<http://www.unaids.org/>

United Nations Population Fund (UNFPA)
<http://www.unfpa.org/>

World Health Organization (WHO)
<http://www.who.ch/>

P. D. Blumenthal and N. McIntosh, *Pocket Guide for Family Planning Service Providers*, 1996-1998, 2d ed. (Baltimore: JHPIEGO, 1997).

M. B. Bracken, "Oral Contraception and Congenital Malformations in Offspring: A Review and Meta-analysis of the Prospective Studies," *Obstetrics and Gynecology* 76, nos. 2,3 (1990): 552-57.

V. E. Cullins, "Noncontraceptive Benefits and Therapeutic Uses of Depot Medroxyprogesterone Acetate," *Journal of Reproductive Medicine* 41 (5 Supplement, May 1996): 428-33.

K. M. Curtis and P.L. Bright, eds., *Recommendations for Updating Selected Practices in Contraceptive Use: Results of a Technical Meeting*, vol. 1, "Combined Oral Contraceptives, Progestin-Only Injectables, Norplant Implants, Copper-Bearing Intrauterine Devices," The Technical Guidance Working Group (Nov. 1994).

Family Health International, "Injectables," *Contraceptive Technology Update Series* (Research Triangle Park, NC: FHI, 1994).

M. Gaines, ed., *Recommendations for Updating Selected Practices in Contraceptive Use, Volume II* (USAID/MAQ, Dec. 1997).

R. A. Hatcher, et al., *Contraceptive Technology*, 17th ed. (New York: Ardent Media, Inc., 1998).

R. A. Hatcher, et al., *The Essentials of Contraceptive Technology* (Baltimore: The Johns Hopkins School of Public Health, Population Information Program, July 1997): 7-18.

A. M. Kaunitz, "Depot Medroxyprogesterone Acetate Contraception and the Risk of Breast and Gynecological Cancer," *Journal of Reproductive Medicine* 41 (5 Supplement May 1996): 419-27.

R. E. Lande, "New Era for Injectables," *Population Reports*, Series K, no. 5 (Baltimore: Johns Hopkins School of Public Health, Population Information Program, Aug. 1995).

A. P. McCauley and J. S. Geller, "Decisions for Norplant Programs," *Population Reports* Series K, no. 4 (1992).

B. Robey, J. Ross, and I. Bhushan, "Meeting Unmet Need: New Strategies," *Population Reports*, Series J, no. 43 (Baltimore: Johns Hopkins School of Public Health, Population Information Program, Sept. 1996).

B. Shane, *Family Planning Saves Lives*, 3d ed. (Washington, DC: Population Reference Bureau, Jan. 1997).

L. Speroff and P. Darney, *A Clinical Guide for Contraception*, 2d ed. (Baltimore: Williams & Wilkins, 1996): 61.

J. Trussell, et al., "Contraceptive failure in the U.S.—An Update," *Studies in Family Planning* 21, no. 1 (Jan.-Feb. 1990): 51-4.

United Nations Department for Economic and Social Information and Policy Analysis, Population Division, *Levels and Trends of Contraceptive Use as Assessed in 1994* (New York: UN, 1996): 61.

World Health Organization, *Improving Access to Quality Care in Family Planning: Medical Eligibility Criteria for Initiating and Continuing Use of Contraceptive Methods* (Geneva: WHO, 1996).

World Health Organization and UNICEF, *Revised 1990 Estimates of Maternal Mortality* (Geneva: WHO and UNICEF, 1996).

World Health Organization, "Collaborative Study of Neoplasia and Steroid Contraceptives: Depot Medroxyprogesterone Acetate (DMPA) and Risk of Endometrial Cancer," *International Journal of Cancer* 49 (1991): 186-90.

References

1. World Health Organization and UNICEF, *Revised 1990 Estimates of Maternal Mortality* (Geneva: WHO and UNICEF, 1996).
2. World Health Organization, "Abortion: A Tabulation of Available Data on the Frequency and Mortality of Unsafe Abortion, Second Edition" (Geneva: WHO, 1994); S. Singh and S. Henshaw, "The Incidence of Abortion: A Worldwide Overview" (Paper presented at the IUSSP Seminar on Socio-Cultural and Political Aspects of Abortion from an Anthropological Perspective, Trivandrum, India, March 25-28, 1996); A. Tinker and M. Koblinsky, "Making Motherhood Safe," World Bank Discussion Paper no. 202 (Washington, DC: World Bank, 1993).
3. UNFPA, *Family Planning: Saving Children, Improving Lives* (New York: UNICEF, 1992).
4. B. Shane, *Family Planning Saves Lives*, 3d ed. (Washington, DC: Population Reference Bureau, Jan. 1997).
5. B. Robey, et al., "Meeting Unmet Need: New Strategies," *Population Reports*, Series J, no. 43 (Baltimore, MD: Johns Hopkins School of Public Health, Population Information Program, September 1996); N. Yinger, *Unmet Need for Family Planning: Reflecting Women's Perceptions* (Washington, DC: International Center for Research on Women, April 1998).
6. J. Fortney, et al., "Reproductive Mortality in Two Developing Countries," *American Journal of Public Health* 76 (1986):134-38 as quoted in Deborah Maine, et al., "Risks and Rights: The Uses of Reproductive Health Data," *Reproductive Health Matters* 6 (Nov. 1995): 46.
7. United Nations Department for Economic and Social Information and Policy Analysis, Population Division, *Levels and Trends of Contraceptive Use as Assessed in 1994* (New York: UN, 1996): 61.
8. R. A. Hatcher, et al., *Contraceptive Technology*, 17th ed. (New York: Ardent Media, Inc., 1998).
9. *Ibid.*
10. D. Grimes and K. Economy, "Primary Prevention of Gynecologic Cancers," *American Journal of Obstetrics and Gynecology* 172 (Jan. 1995): 227-35.
11. L. Speroff and P. Darney, *A Clinical Guide for Contraception*, 2d ed. (Baltimore: Williams & Wilkins, 1996): 61.
12. Hatcher, et al., *Contraceptive Technology*.
13. Speroff and Darney, *A Clinical Guide for Contraception*.
14. American College of Obstetrics and Gynecology, "Oral Contraceptives," *ACOG Bulletin*, no. 106 (July 1987).
15. Speroff and Darney, *A Clinical Guide for Contraception*: 96.
16. World Health Organization, "WHO Scientific Group Meeting on Cardiovascular and Steroid Hormone Contraceptives" *Weekly Epidemiological Record*, vol. 48, no. 28 (Nov. 1997): 361-63.
17. *Ibid.*
18. World Health Organization, *Improving Access to Quality Care in Family Planning: Medical Eligibility Criteria for Initiating and Continuing Use of Contraceptive Methods*. (Geneva: WHO, 1996); K.M. Curtis and P.L. Bright, eds., *Recommendations for Updating Selected Practices in Contraceptive Use: Results of a Technical Meeting*, vol. 1, The Technical Guidance Working Group (Chapel Hill, NC: Program for International Training in Health, UNC at Chapel Hill, School of Medicine, Nov. 1994).
19. World Health Organization, *Improving Access to Quality Care in Family Planning: Medical Eligibility Criteria for Initiating and Continuing Use of Contraceptive Methods*, and M'e. Orme, et al., "Clinical pharmacokinetics of oral contraceptive steroids," *Clinical Pharmacokinetics* 8 (1983): 95-136.
20. C. La Vecchia et al., "Oral Contraceptives and Cancer. A Review of the Evidence," *Drug Safety* 14, no. 4 (April 1996): 260-72.
21. M. B. Bracken, "Oral Contraception and Congenital Malformations in Offspring: A Review and Meta-Analysis of the Prospective Studies," *Obstetrics and Gynecology* 76, nos. 2,3 (1990): 552-57; and American College of Obstetrics and Gynecology, "Oral Contraceptives."
22. W. R. Finger, "Oral Contraceptives are Safe, Very Effective," *Network* 16, no. 4 (1996); and S.N. Mitra and A. Al-Sabir, "Contraceptive Use Dynamics in Bangladesh," DHS Working Papers, no. 2 (Calverton, MD: Macro International, Inc., Oct. 1996).
23. E. Murphy and C. Steele, "Client-Provider Interactions in Family Planning Services: Guidance from Research and Program Experience," in M. Gaines, ed., *Recommendations for Updating Selected Practices in Contraceptive Use*, Volume II, USAID/MAQ (Dec. 1997).
24. E. Miller, "Personal communication between E. Miller and Sharon Camp," Consortium for Emergency Contraception, Sept. 15, 1997.
25. World Health Organization, Task Force on Postovulatory Methods of Fertility Regulation, "Randomised Controlled Trial of Levonorgestrel Versus the Yuzpe Regimen of Combined Oral Contraceptives for Emergency Contraception," *The Lancet*, vol. 352 (Aug. 8, 1998).

26. *Ibid.*
27. Bracken, "Oral Contraception."
28. Program for Appropriate Technology in Health, "Emergency Contraceptive Pills: Safe and Effective But Not Widely Used," *Outlook* 14, no. 2 (Sept. 1996).
29. World Health Organization, *Improving Access to Quality Care in Family Planning*.
30. Food and Drug Administration, "Prescription Drug Products: Certain Combined Oral Contraceptives For Use As Postcoital Emergency Contraception," *Federal Register* 62 (1997): 8610-12.
31. World Health Organization, Task Force on Postovulatory Methods of Fertility Regulation, "Randomised Controlled Trial of Levonorgestrel."
32. American College of Obstetricians and Gynecologists, "Emergency Oral Contraception," *ACOG Practice Patterns*, no. 3 (Dec. 1996).
33. Hatcher, et al., *Contraceptive Technology*; and M. Gaines, ed., *Recommendations for Updating Selected Practices*.
34. R. E. Lande, "New Era for Injectables," *Population Reports*, Series K, no. 5 (Baltimore: Johns Hopkins School of Public Health, Population Information Program, Aug. 1995).
35. A. M. Kaunitz, "Depot Medroxyprogesterone Acetate Contraception and the Risk of Breast and Gynecological Cancer," *Journal of Reproductive Medicine* 41 (5 Supplement, May 1996): 419-27; and World Health Organization, "Depo-medroxyprogesterone Acetate (DMPA) and Cancer: Memorandum From a WHO Meeting," *Bulletin of the World Health Organization* 71 (1993): 669-76.
36. Hatcher, et al., *Contraceptive Technology*; and L. J. Dorflinger, "Medical Contraindications and Issues for Consideration in the Use of Once-a-Month Injectable Contraceptives," *Contraception* 49, no. 5 (May 1994): 45-68.
37. D. C. G. Skegg, et al., "Depot Medroxyprogesterone Acetate and Breast Cancer. A Pooled Analysis of the WHO and New Zealand Studies," *Journal of the American Medical Association* 273 (1995): 799-804.
38. Lande, "New Era for Injectables."
39. V. E. Cullins, "Noncontraceptive Benefits and Therapeutic Uses of Depot Medroxyprogesterone Acetate," *Journal of Reproductive Medicine*, 41 (5 Supplement, May 1996): 428-33; World Health Organization, "Collaborative Study of Neoplasia and Steroid Contraceptives: Depot Medroxyprogesterone Acetate (DMPA) and Risk of Endometrial Cancer," *International Journal of Cancer*, 49 (1991): 186-90; and Speroff and Darney, *A Clinical Guide for Contraception*: 178.
40. P. D. Blumenthal and N. McIntosh, *Pocket Guide for Family Planning Service Providers, 1996-1998*, 2d ed. (Baltimore: JHPIEGO, 1997).
41. Hatcher, et al., *Contraceptive Technology*: 476, 498.
42. Speroff and Darney, *A Clinical Guide for Contraception*: 179.
43. World Health Organization, "Facts About Once-a-Month Injectable Contraceptives: Memorandum From a WHO Meeting," *Bulletin of the World Health Organization* 71, no. 6 (1993): 677-89; and A. L. Nelson, "Counseling Issues and Management of Side Effects for Women Using Depot Medroxyprogesterone Acetate Contraception," *Journal of Reproductive Medicine* 41 (5 Supplement, May 1996): 391-400.
44. Family Health International, "Injectables," *Contraceptive Technology Update Series* (Research Triangle Park, NC: FHI, 1994).
45. Family Health International, "Injectables."
46. J. L. Simpson and O. P. Phillips, "Spermicides, Hormonal Contraception and Congenital Malformations," *Advances in Contraception* 6 (1990): 141-47; and Bracken, "Oral Contraception:" 552-57.
47. Blumenthal and McIntosh, *Pocket Guide for Family Planning Service Providers*.
48. Hatcher, et al., *The Essentials of Contraceptive Technology*: 7-18.
49. Family Health International, "Injectables."
50. L. Bahamonde, et al., "Return of Fertility After Discontinuation of the Once-a-Month Injectable Contraceptive Cyclofem," *Contraception* 55 (1997): 307-10.
51. World Health Organization, Special Programme of Research, Development and Research Training in Human Reproduction, Task Force on Long-Acting Systemic Agents of Fertility Regulation, "Comparative Study on the Effects of Two Once-a-Month Injectable Steroidal Contraceptives (Mesigyna and Cyclofem) on Glucose Metabolism and Liver Function," *Contraception*, forthcoming 1998; and J. Asham, "Monthly Injectable Contraceptives and Breast Cancer," Master of Science Thesis, University of Washington, Seattle, Washington, 1990.

52. World Health Organization, *Improving Access to Quality Care in Family Planning*.
53. B. Shane, personal communication with Population Council, New York, Sept. 1, 1998.
54. Hatcher, et al., *Contraceptive Technology*.
55. Family Health International, "Progestin-only Contraception," *Network* 15, no. 4 (June 1995).
56. Speroff and Darney, *A Clinical Guide for Contraception*: 137.
57. Speroff and Darney, *A Clinical Guide for Contraception*.
58. Bracken, "Oral Contraceptives"; and World Health Organization, *Improving Access to Quality Care in Family Planning*.
59. UN Department for Economic and Social Information and Policy Analysis, *Levels and Trends of Contraceptive Use as Assessed in 1994* (New York: UN, 1996): 61.
60. Hatcher, et al., *Contraceptive Technology*: 514.
61. Family Health International, "Mechanisms of the Contraceptive Action of Hormonal Methods and Intrauterine Devices (IUDs)" (Research Triangle Park, NC: FHI, April 1998).
62. Speroff and Darney, *A Clinical Guide for Contraception*: 207; and M.M. Farley, et al., "Intrauterine Devices and Pelvic Inflammatory Disease: An International Perspective," *The Lancet* 339 (1992): 785.
63. Curtis and Bright, eds., *Recommendations for Updating Selected Practices*; and K.R. Petersen, et al., "Intrauterine Devices in Nulliparous Women," *Advances in Contraception* 7, no. 4 (1991): 333-38.
64. Hatcher, et al., *The Essentials of Contraceptive Technology*: 8-12; and World Health Organization, *Improving Access to Quality Care in Family Planning*.
65. Hatcher, et al., *Contraceptive Technology*.
66. Speroff and Darney, *A Clinical Guide for Contraception*.
67. K. Trieman, et al., "IUDs—An Update," *Population Reports*, Series B, no. 6 (Baltimore: The Johns Hopkins School of Public Health, Population Information Program, Dec. 1995).
68. Speroff and Darney, *A Clinical Guide for Contraception*: 205.
69. Centers for Disease Control (CDC), *IUDs: Guidelines for Informed Decision-Making and Use* (Atlanta: CDC, 1987).
70. Hatcher, et al., *Contraceptive Technology*.
71. Speroff and Darney, *A Clinical Guide for Contraception*.
72. UN Department for Economic and Social Information and Policy Analysis, *Levels and Trends of Contraceptive Use*: 61.
73. Hatcher, et al., *Essentials of Contraceptive Technology*.
74. UNDP/UNFPA/WHO/World Bank Special Programme of Research, Development and Research Training in Human Reproduction, *The Female Condom: A Review* (Geneva: WHO, 1997).
75. Blumenthal and McIntosh, *Pocket Guide for Family Planning Service Providers*.
76. UN Department for Economic and Social Information and Policy Analysis, *Levels and Trends of Contraceptive Use*: 61.
77. Hatcher, et al., *Contraceptive Technology*.
78. Gaines, ed., *Recommendations for Updating Selected Practices*.
79. *Ibid.*
80. UN Department for Economic and Social Information and Policy Analysis, *Levels and Trends of Contraceptive Use*: 61.
81. Hatcher, et al., *Contraceptive Technology*.
82. T. R. Einarson, et al., "Maternal Spermicide Use and Adverse Reproductive Outcome: A Meta-Analysis," *American Journal of Obstetrics and Gynecology* 162 (1990): 655-60.
83. Hatcher, et al., *Contraceptive Technology*.
84. W. Cates, Jr., and K. M. Stone, "Family Planning, Sexually Transmitted Diseases and Contraceptive Choice: A Literature Update," *Family Planning Perspectives* 24 (1992): 75-84; P. Bright, et al., *Cervical Cancer Prevention* (Chapel Hill, NC: Program for International Training in Health, UNC at Chapel Hill, School of Medicine, July 1996); and Grimes, and Economy, "Primary Prevention of Gynecologic Cancers."
85. N. Muñoz and F. X. Bosch, "The Causal Link Between HPV and Cervical Cancer and Its Implications for Prevention of Cervical Cancer," *The Bulletin of the Pan-American Health Organization* 30, no. 4 (Dec. 1996): 362-77.

86. A. Hildesheim, et al., "Barrier and Spermicidal Contraceptive Methods and Risk of Invasive Cervical Cancer," *Epidemiology* 1, no. 4 (1990): 266-72; and A. L. Coker, et al., "Barrier Methods Of Contraception And Cervical Intraepithelial Neoplasia," *Contraception* 45, no. 1 (1992): 1-10.
87. Gaines, *Recommendations for Updating Selected Practices*.
88. UN Department for Economic and Social Information and Policy Analysis, *Levels and Trends of Contraceptive Use*: 61.
89. Hatcher, et al., *Contraceptive Technology*.
90. Hatcher, et al., *Essentials of Contraceptive Technology*: 4-9.
91. H. B. Peterson, et al., "The Risk of Pregnancy After Tubal Sterilization: Findings From the U.S. Collaborative Review of Sterilization," *American Journal of Obstetrics and Gynecology* 174 (1996): 1161-70.
92. Grimes and Economy, "Primary Prevention of Gynecologic Cancers."
93. L. Liskin, et al., "Minilaparotomy and Laparoscopy: Safe, Effective, and Widely Used," *Population Reports, Series C*, no. 9 (Baltimore: Population Information Program, The Johns Hopkins University, May 1985).
94. H. B. Peterson, et al., "The Risk of Ectopic Pregnancy After Tubal Sterilization," *The New England Journal of Medicine* 336 (March 13, 1997): 762-7.
95. E. Hardy, et al., "Risk Factors for Tubal Sterilization Regret, Detectable Before Surgery," *Contraception* 54 (1996): 159-62; and C. A. Church and J.S. Geller, "Voluntary Female Sterilization: Number One and Growing," *Population Reports, Series C*, no. 10 (Baltimore: The Johns Hopkins University, Population Information Program, Nov. 1990).
96. Hatcher, et al., *Contraceptive Technology*.
97. Hatcher, et al., *Essentials of Contraceptive Technology*: 10-4.
98. Hatcher, et al., *Contraceptive Technology*: 576.
99. Giovannucci, et al., "A Retrospective Cohort Study of Vasectomy and Prostate Cancer in US Men," *Journal of the American Medical Association* 269 (1993): 878-82; K. Zhu, et al., "Vasectomy and Prostate Cancer: A Case-Control Study in a Health Maintenance Organization," *American Journal of Epidemiology* 144 (1996): 717-22; F. J. Massey, et al., "Vasectomy and Health: Results From a Large Cohort Study," *Journal of the American Medical Association* 252 (1984): 1023-9; S. Sidney, et al., "Vasectomy and the Risk of Prostate Cancer in a Cohort of Multiphasic Health Checkup Examinees: Second Report," *Cancer Causes and Control* 2 (1991): 113-6; and E. Lynge, et al., "Vasectomy and Testis and Prostate Cancer," *Fertility Control Review* 3, no. 8 (1994).
100. Hatcher, et al., *Essentials of Contraceptive Technology*: 10-3.
101. Gaines, *Recommendations for Updating Selected Practices*.
102. World Health Organization, "A Prospective Multicentre Trial of the Ovulation Method of Natural Family Planning. II: The Effectiveness Phase," *Fertility and Sterility* 36 (1981): 591-98.
103. UN Department for Economic and Social Information and Policy Analysis, *Levels and Trends of Contraceptive Use*: 61.
104. Hatcher, et al., *Contraceptive Technology*.
105. K.I. Kennedy, et al., "Consensus Statement on the Lactational Amenorrhea Method for Family Planning," *International Journal of Gynecology and Obstetrics* 54 (1996): 55-7; and M. Labbok, et al., *Guidelines: Breastfeeding, Family Planning, and the Lactational Amenorrhea Method - LAM* (Washington, DC: Institute for Reproductive Health, Georgetown University, 1994).
106. Gaines, *Recommendations for Updating Selected Practices*.
107. Grimes and Economy, "Primary Prevention of Gynecologic Cancers."
108. Labbok, et al., *Guidelines: Breastfeeding, Family Planning*.
109. United Nations, *Report of the International Conference on Population and Development* (Cairo, Egypt: UN, Sept. 5-13, 1994).

Design and production: Sharon Hershey Fay
Managing editor: Sara Adkins-Blanch
Translation into French: Pascale Ledeur
Translation into Spanish: Angeles Estrada
Printing: Jarboe Printing

Cover photo: Alex de Sherbinin (Mauritania)

To request additional copies of this booklet, please
contact International Programs at PRB (see address on
back cover)

December 1998

PRB



POPULATION REFERENCE BUREAU

1875 Connecticut Ave., NW, Suite 520

Washington, DC 20009

Tel.: 202-483-1100; Fax: 202-328-3937

<http://www.prb.org>; E-mail: popref@prb.org



WORLD HEALTH ORGANIZATION

Family Planning and Population Unit

Division of Reproductive Health

Geneva, Switzerland